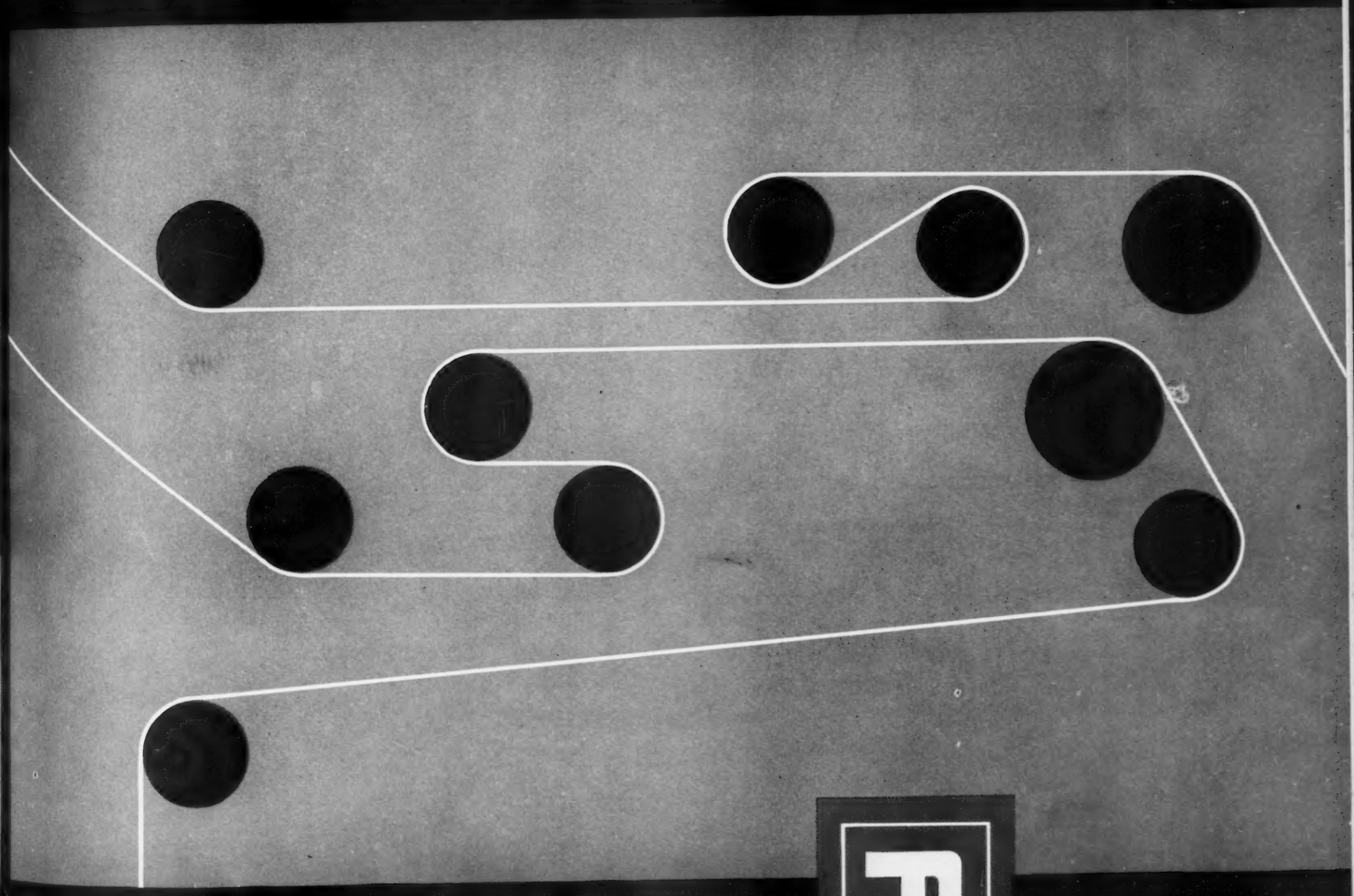
PRINTING EQUIPMENT



When you buy a paper cutter... say how

how WELL WILL IT CUT?
how MUCH WILL UPKEEP COST?
how LONG WILL IT PRODUCE EFFICIENTLY?

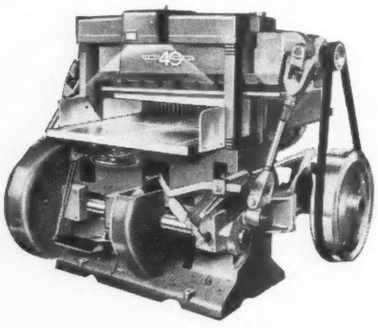
The answers to these three questions are found in the design of the paper cutter for, ultimately, design determines performance.

Seybold, and Seybold design alone, gives you Double-End-Pull, combined with Continuous Double-Shear knife action. Ask any owner of a Seybold paper cutter how this improves cutter performance . . . produces more accurate cutting, without chatter marks . . . keeps knives sharper longer . . . keeps machines operating at top efficiency for many years.

Don't let confusing smoke signals distract your attention from the main issues of "How well" . . . "How much" . . . and "How long".

Seybold Announces Availability of HEAVY-DUTY 40" Paper Cutters

Seybold offers a limited number of Heavy-Duty 40" Precision Paper Cutters for early delivery—as soon as 4 to 6 weeks in many instances. These machines are now on display at all Seybold district offices. Stop in and see this machine in action today. Find out for yourself why "Double-End-Pull, combined with Continuous Double-Shear knife action" makes such a big difference in paper cutter performance.



G

Harris-Seybold Company
General Offices, Cleveland 5, Ohio
( ) Please send additional information
( ) Please have representative call on me on or about .....

Name .....
Title .....
Company .....
Address .....

HARRIS-SEYBOLD

General Offices, Cleveland 5, Ohio

HARRIS PRESSES • SEYBOLD CUTTERS • OTHER GRAPHIC ARTS EQUIPMENT

District Offices: New York • Chicago • Cleveland • Atlanta • San Francisco • Toronto, Canada

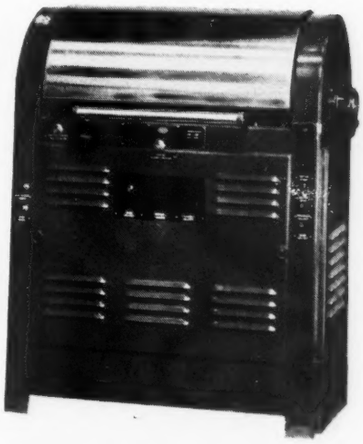
USE THE "MASTER" PLAN . . .

When you install one or more Sta-Hi Master Formers in your stereotype department, you're operating under a plan that gives you smooth sailing routine and assures better results.

You'll find Master Formers on the job in newspaper plants of almost any size, from the largest on down, where they appreciate fine work accomplished with a saving of time and effort.

You'll print a better looking newspaper if you use the "Master" plan. Let us tell you how this entirely automatic machine for forming and electrically baking dry mats can help you in your stereotype production. We'll be glad to help you plan an installation in your plant.

STA-HI



STA-HI CORPORATION • 1020 CROCKER ST. • LOS ANGELES 21

Book Production

with Rubber Plates

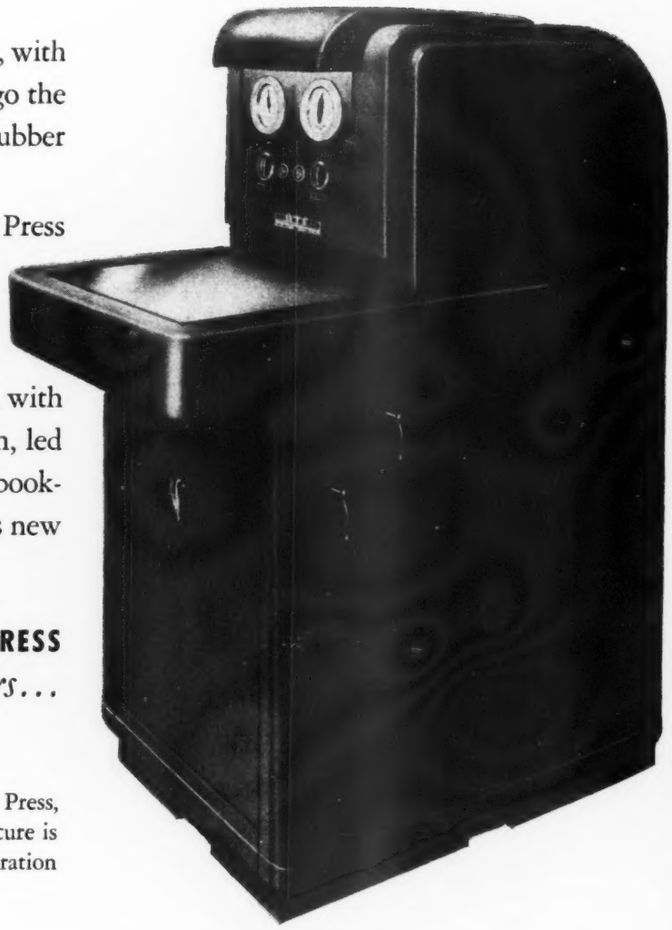
made on the

ATF Molding Press

PRODUCTION-WISE book manufacturers, with a bent for smart styling, have proved long ago the economic value of printing books with rubber plates.

Rubber plates made on the ATF Molding Press can so reduce the cost of book publishing as to make it a "must" when new equipment is to be installed.

Recent long runs of several popular books, with one set of rubber plates for each complete run, led one publisher to remark, "The science of book-making may be profoundly influenced by this new technology."



The **ATF MOLDING PRESS** *offers...*

Precision Curing Control

Heat, for curing rubber plates in the ATF Molding Press, is controlled automatically by thermostats. Correct cure is not left to guesswork but is a precise control operation built into the machine.

Finger-Tip Pressure Control

Accurate control and gaging of pressure is accomplished by a mere twist of the wrist. Valve handle is placed in a "finger-tip" position for quick, easy, positive control.

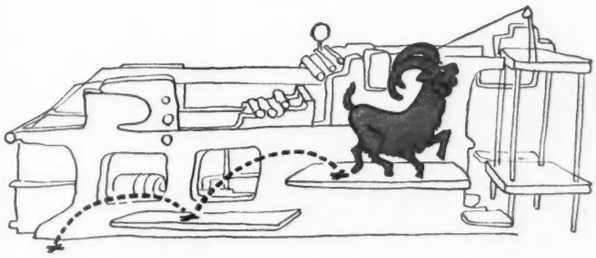
Composing Room Make-Up Simplified

Rubber plates made on the ATF Molding Press may be mounted to any material: metal, wood, cardboard, or fabric—on flatbed or rotary presses. Easily demounted and stored.

American Type Founders Sales Corporation

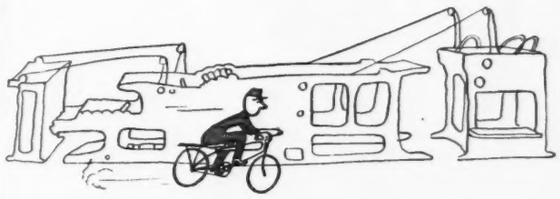
ATF Associate

Branches in Principal Cities



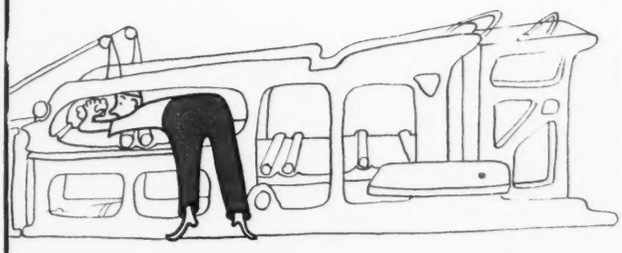
You don't have to be a Mountain Goat
To operate a Miller Press.

They are built low for good balance and over-all visibility of feeder and delivery boards. No climbing necessary.



You don't need a Bicycle
To get around a Miller Press.

Two steps from the center of any Miller Press Will take you to the feeder or delivery.



You don't need to be a Contortionist
To "get-at" a Miller Press.

The swing-away feeder and the quickly raised board gives wide-open access to bed and cylinder.

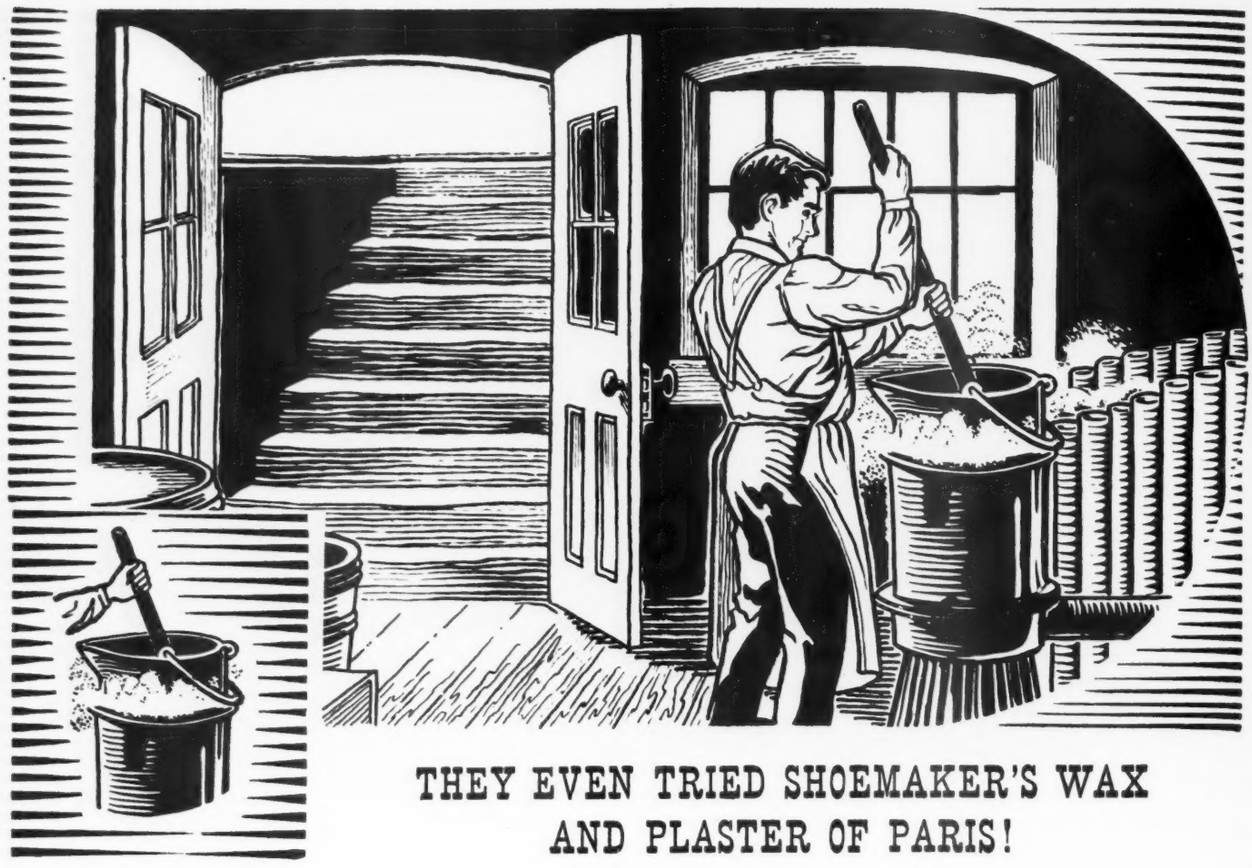
You don't have to be an Octopus
To make adjustments on a Miller Press.

Adjustments are simple—no tapes, balls, wheels, rollers or gadgets to set or get out of order.

If you want a good, pleasant job, operate a Miller Press

miller

Miller Printing Machinery Co., Pittsburgh, Pa.



THEY EVEN TRIED SHOEMAKER'S WAX AND PLASTER OF PARIS!

FROM 1815 TO 1856—and even later—printers everywhere were experimenting with new, different and unusual compounds in an effort to make better roller composition.

Using glue and molasses as a base, they tried first tar, then India rubber, fat, fish oil, shoemaker's wax and even plaster of paris. It was guesswork... every printer for himself... each with his own formulae, his own methods. The results were often erratic... good one day, unusable the next. There was no standardization, no dependability.

It was in 1826 that Sam'l Bingham entered this picture. He, too, experimented with rollers and arrived at a number of sound conclusions. Then in 1847 he opened his own shop.

Experimentation in the Bingham shop was not the hit or miss, by guess and by golly proposition that it was with individual printers. Bingham was a specialist... with a specialist's dream of perfection. He prospered.

Today, with the aid of modern technologies, his successors, SAM'L BINGHAM'S SON MFG. CO., with sixteen centrally located factories, carry on the continuous search, begun over 100 years ago, to provide the American graphic arts industry with the finest possible product, always delivering the "right roller at the right time"!

OVER ONE HUNDRED YEARS OF ROLLER MAKING

FACTORIES

ATLANTA 3 · CHICAGO 5 · CLEVELAND 14 · DALLAS 1 · DES MOINES 2 · DETROIT 10 · HOUSTON 6 · INDIANAPOLIS 2

SAM'L BINGHAM'S SON MFG. CO.
MANUFACTURERS OF
PRINTERS' ROLLERS
LITHO-OFFSET ROLLERS

FACTORIES

KALAMAZOO 12 · KANSAS CITY 6 · MINNEAPOLIS 15 · NASHVILLE 3 · OKLAHOMA CITY 6 · PITTSBURGH 3 · ST. LOUIS 2 · SPRINGFIELD, O.

MAKERS OF RUBBER • NON-MELTABLE • FABRIC-COVERED • ROTOGRAVURE • OFFSET • COMPOSITION • VARNISH-LACQUER • GRAINING ROLLERS

PRINTING EQUIPMENT *Engineer*

Volume 76 Number 6

A technical publication for the mechanical executive responsible for printing production, equipment and supplies in the commercial, magazine, private plant and daily newspaper field.

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Printed in U. S. A.

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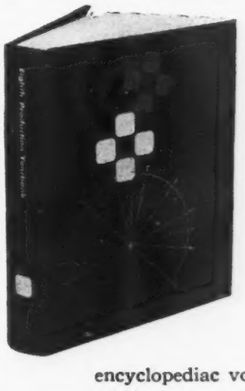

A VALUABLE BOOK

FOR MECHANICAL AND PRODUCTION EXECUTIVES

The *VIIIth Graphic Arts Production Year Book* should be in the hands of every mechanical and production executive. Commercial and newspaper printing plant executives, will find this encyclopediac volume of constant help to them. A mass of detail which no executive can keep in mind will be found in this book.

Printing plant executives supposedly have a comprehensive overall knowledge about printing and fabricating process questions which come up frequently.

Eight Sections—1. Art and photography; 2. Photo-engraving; 3. Electrotypes and Duplicate plates; 4. Paper; 5. Printing processes; 6. Binding and mailing; 7. Typography; 8. Buyers' guide and indexes.

Size, 8½ in. by 11¼ in.; 700 pages with 900 illustrations with many beautiful color inserts by all processes. Bound in gray crash cover.

PRICE $15.50 per copy, please send remittance with order

PRINTING EQUIPMENT *Engineer*

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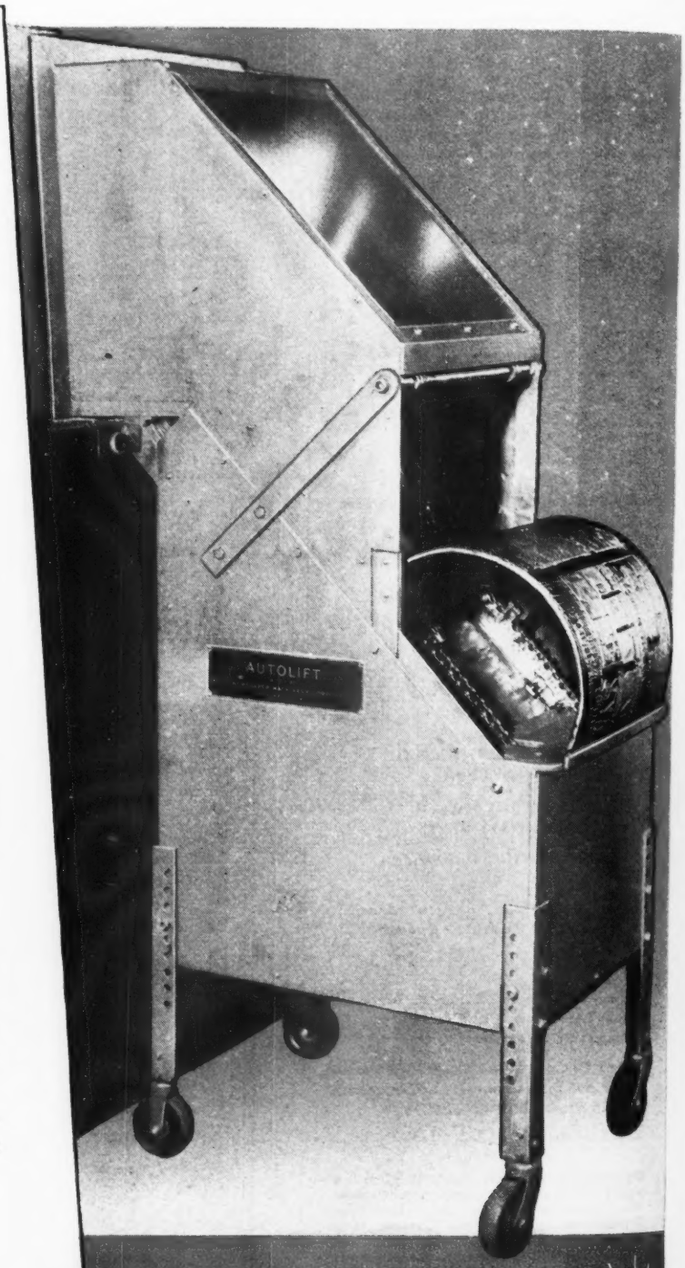
The New WOOD AUTOLIFT

Feeds dead plates to furnaces without splash

The new Wood AUTOLIFT eliminates injuries. It feeds dead plates to furnaces mechanically with the stereotyper at a safe distance. He lifts plates to a convenient height, places them on moving chains. AUTOLIFT does the rest!

Furnaces also work better. AUTOLIFT tilts plates into furnaces one at a time, thus never overloading heating equipment. By keeping furnace temperatures nearly even, AUTOLIFT helps maintain a flow of uniform molten metal to casting box. Ask for illustrated brochure. Wood Newspaper Machinery Corporation, Plainfield, N. J. Executive Offices: 501 Fifth Avenue, New York 17, N. Y.

IF IT'S Wood IT'S GOOD



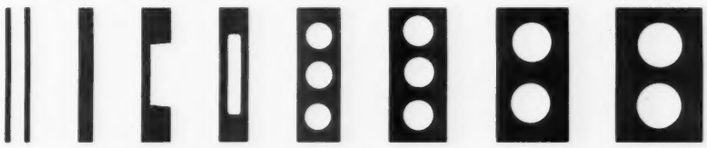
Just push stacked plates to base of furnace

Simply place plates on moving chain

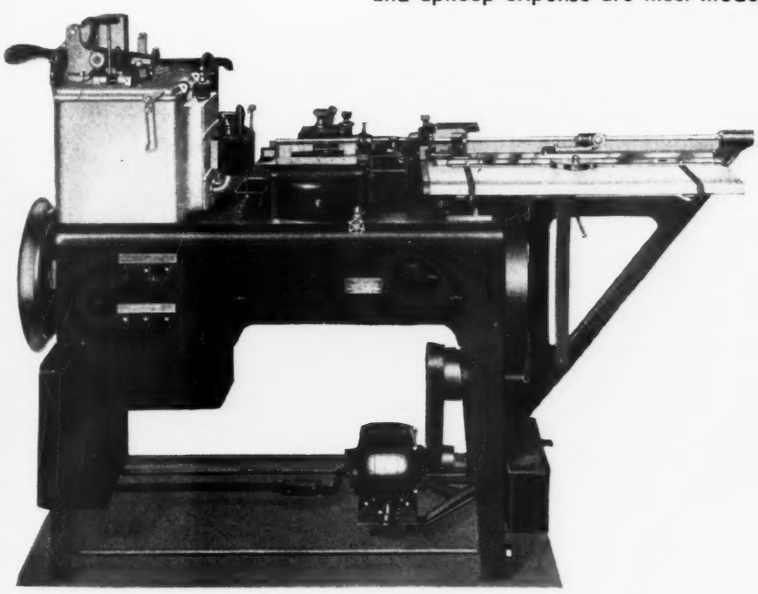
Stand back and let AUTOLIFT do it

The ELROD

The Elrod answers the needs of the composing room for a single-purpose machine producing an abundance of leads, slugs, rule and base material of high quality. Shown herewith are some examples of the wide variety and thickness (1-point to 36-points) of Elrod-cast



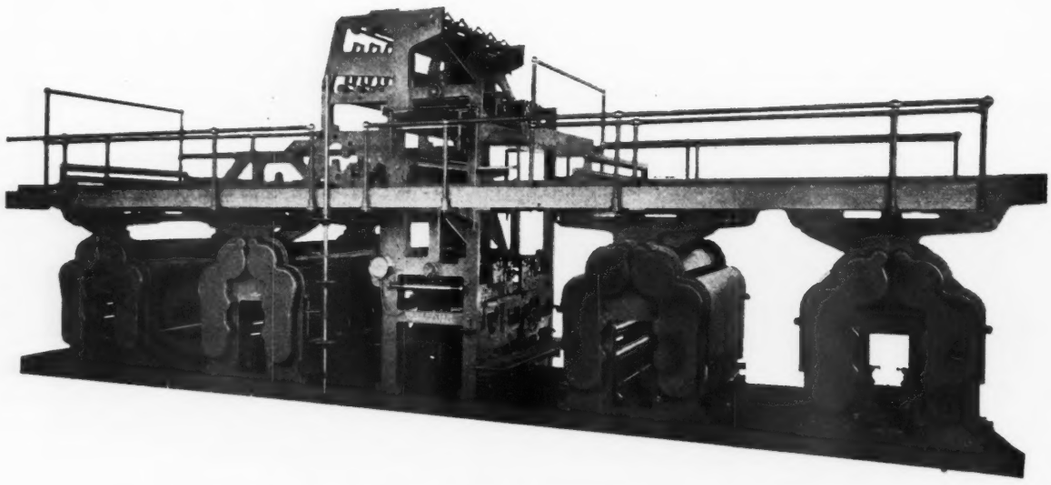
material available for the compositor when and where he needs it. The Elrod produces a constant and plentiful supply of material as one continuous strip of metal, cooled and solidified under pressure, with a uniformity that meets today's exacting printing requirements with entire satisfaction. Best of all, the Elrod is so practical in design and mechanism and so dependable that both operating costs and upkeep expense are most moderate.



It is highly significant that so many of the nation's leading newspaper and publishing plants, as well as many commercial printing plants look upon the Elrod as their dependable source of strip material, including base for the mounting of shell casts and electros.

Ludlow Typograph Company 2032 Clybourn Avenue, Chicago 14, Illinois

MOST VERSATILE FOR BLACK AND COLOR PRINTING



SCOTT OCTUPLE PRESS

with 4 Superimposed Color Couples

Four Color Printing is completely separated from regular black printing. This avoids loss of black page capacity when printing colors, permits advance preparation of color runs, provides separate make-ready for each color if necessary and allows editorial changes between editions without disturbing register of color pages.

Color rotation always the same, eliminating reversible cylinders and loss of time, ink and rags for washups.

By means of an ingenious angle bar arrangement Four Color Printing can be easily located on any desired page or section.

Illustration shows one end of a Scott Triple Octuple Press now in operation in the plant of the

DAYTON, OHIO, DAILY NEWS

and others now under construction for the

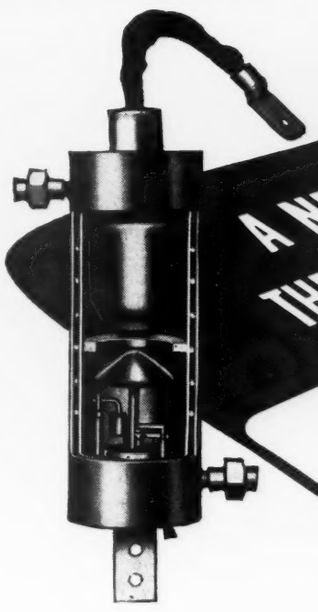
BUFFALO, N. Y., COURIER-EXPRESS
MIAMI, FLA., DAILY NEWS

Send for new Catalog of the New Scott Press showing various arrangements for Black and Color Printing.

WALTER SCOTT & CO., INC.

PLAINFIELD, N. J.

ELECTRONIC PRESS DRIVE



A NEW WAY TO PRINT THE NEWS... THROUGH A SIMPLE ELECTRONIC TUBE

The ignitron tube above converts a-c power for d-c drive motors—is the control and power headquarters for the new General Electric electronic press drive. This modern drive provides closer speed control and more flexibility at **less cost,** compared with conventional a-c drives. The drive is designed around the co-ordinated load-center method of power distribution which saves heavy-wiring costs and critical materials.

Power savings alone range from zero at maximum geared speed to 50 per cent at half speed.

Space is saved and maintenance costs reduced because auxiliary threading motor, slow gearing motor, over-running clutch, two-speed gears and drive brakes are eliminated.

Constant running speed is independent of load changes. The G-E electronic press drive has the advantages of stepless speed control from threading speed to maximum speed, with stable shunt-speed regulation at any point.

Smooth jogging and running operations are performed without contactor or switching operations. Control maintenance is reduced to a minimum.

Load resistor losses are eliminated and heat dissipation is no longer a major expense.

Maintenance costs are reduced because no heavy rotating machinery is required. Electronic power and control apparatus is static.

EVERYTHING ELECTRIC FOR THE PRINTING INDUSTRY

Consider the advantages of purchasing all your electric equipment—glue pots to press drives—from General Electric. It will simplify your designing, buying, installation and service problems. All the components of your plant will dovetail together to form an attractive and efficient operation unit. Call or write your local G-E sales office. ***Apparatus Department, General Electric Company, Schenectady 5, N. Y.***

Have you seen the G-E color sound slidefilm "Modern Industrial Power Distribution"—a More Power to America project designed to aid American industry achieve greater productivity. Ask your local G-E office to arrange for its showing in your area.

Apparatus Department, Sec. E658-26
General Electric Company
Schenectady 5, New York

Please send me bulletin GEA-4670 on the new G-E electronic press drive.

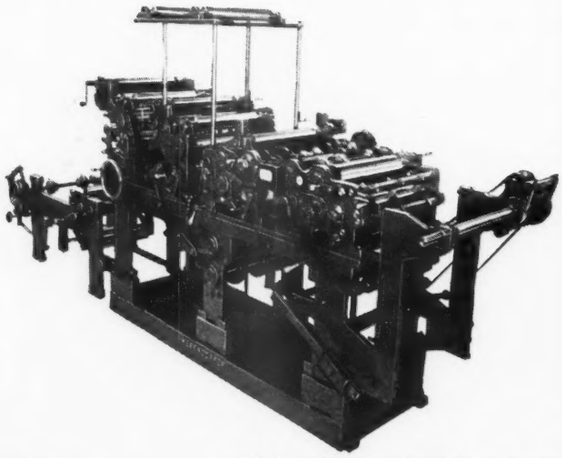
Name.....

Paper.....

City..... State.....

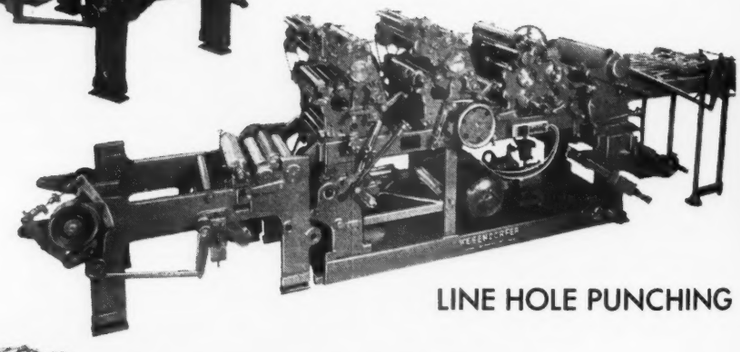
GENERAL ELECTRIC

ATF-Webendorfer..

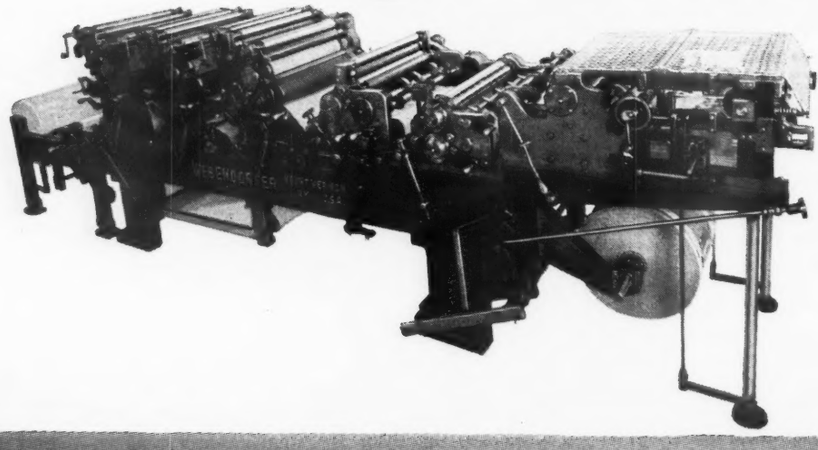


ONE-TIME CARBON SETS

OFFSET AND STEREO PRINTING



LINE HOLE PUNCHING



FLAT SHEETS

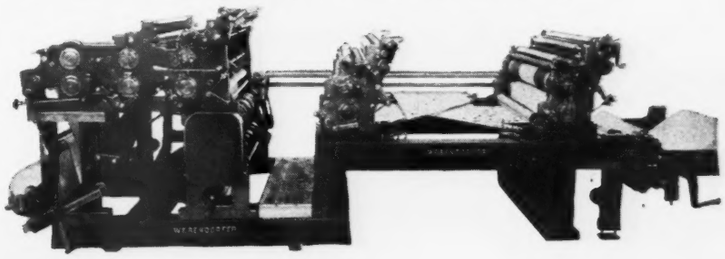
AMERICAN TYPE FOUNDERS

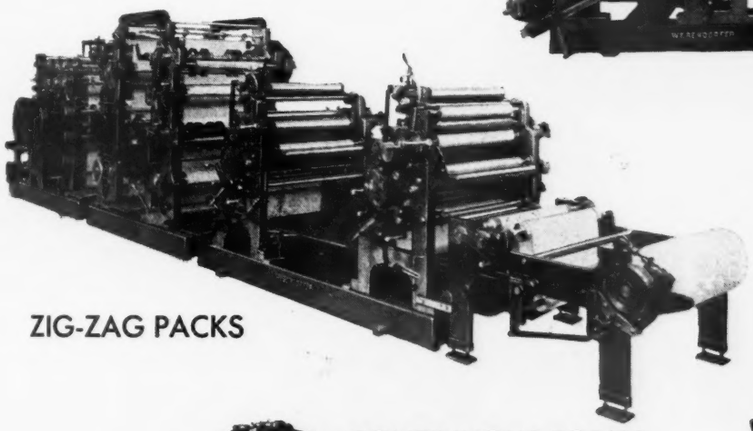
HIGH SPEED WEB-FED PRESSES

for Office and Business Form Work

SPECIALLY built to individual requirements and designed to produce one-time carbon sets, continuous forms, registered forms by offset, rubber plate, or stereotype printing processes . . . incorporating various finishing functions such as imprinting, punching, perforating, numbering, slitting, rewinding, zig-zag folding, or sheeting.

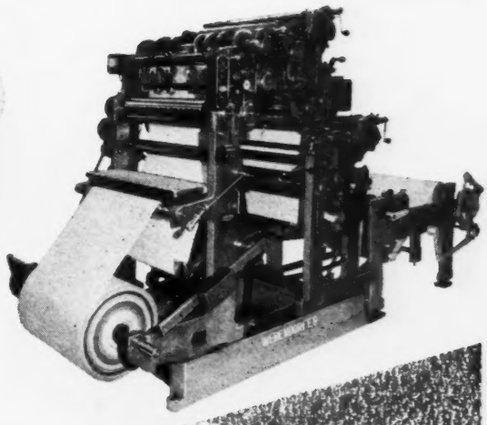
RUBBER-PLATE PRINTING





ZIG-ZAG PACKS

RE-WINDING



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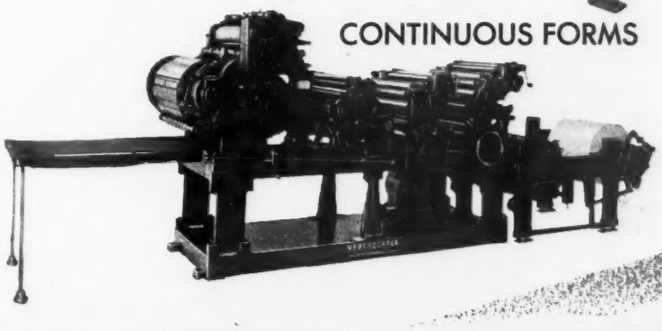


WEBENDORFER DIVISION
2 South Street, Mount Vernon, New York

An ATF Associate

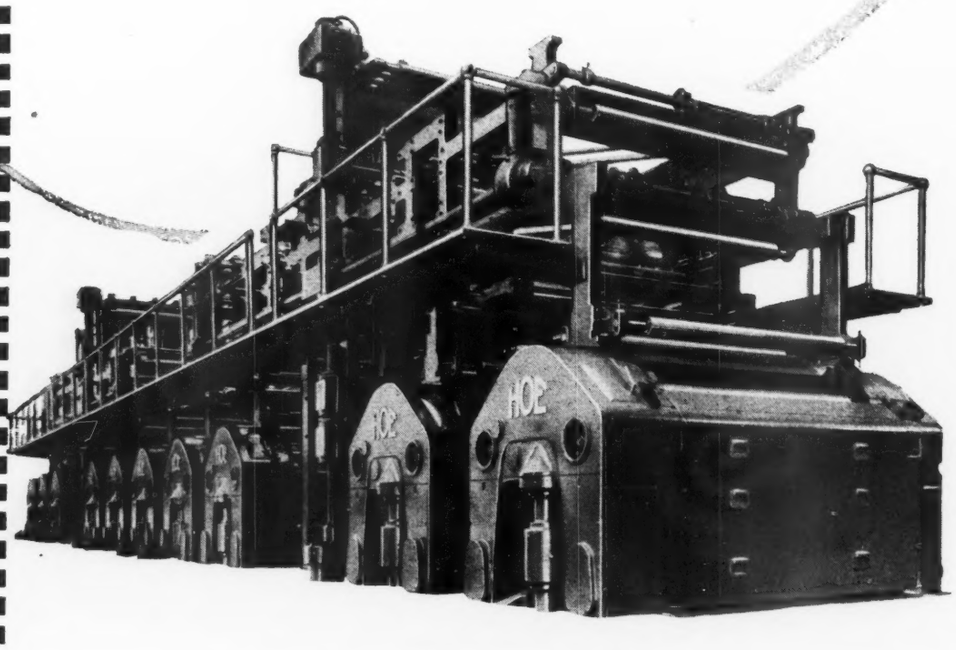
Designed to meet

Color Competition

A major consideration in designing the new Hoe Color-Convertible Newspaper Press was to provide maximum flexibility for R.O.P. color, to enable newspapers to meet the increasing competition of color advertising in other mediums — magazines, posters, direct-mail.

The press is so designed that facilities for every requirement from spot color to full color can be applied at any time, either when the press is being built, or to meet color demands as they arise later. Every possible preparation is made in advance to facilitate the addition of extra color cylinders, reversing mechanisms, duo ink rails, and compensators.

That forward-looking publishers appreciate the importance of being thus prepared for any future color-printing needs is shown by the fact that every one of the Hoe newspaper presses built or ordered since the war has color-printing facilities.

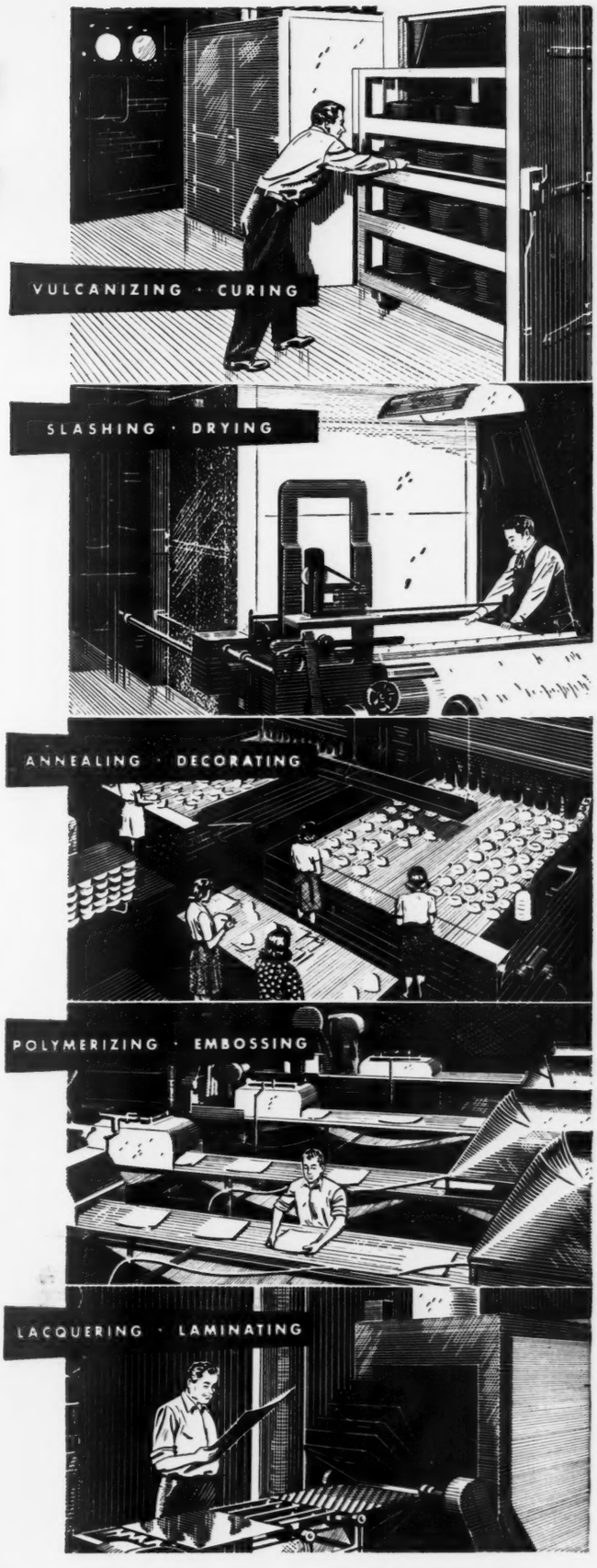


R. HOE & CO., INC.

BRANCHES: BOSTON • CHICAGO • SAN FRANCISCO

910 East 138th Street, New York 54, N. Y.

Production-Line Heating Emphasizes Versatility of GAS



These are the tasks for GAS—these and hundreds of other industrial heat processing requirements. In fact, modern Gas Equipment has proved its superiority in virtually every industrial production-line heating application.

As a source of heat in the manufacture and processing of ceramics, chemicals, textiles, printed materials, plastics, etcetera, GAS combines characteristics found in no other available fuel.

- **SPEED**—heat can be applied to any area or injected to any depth at exactly the temperature and speed desired.
- **CONTROLLABILITY**—automatic controls maintain precise temperatures, permit exacting cycles of heat processing on continuous 24-hour schedules.
- **FLEXIBILITY**—equipment is applicable over a wide range, performs many heat-treating and processing operations without expensive accessory devices.
- **ECONOMY**—the fuel and the modern equipment are economical, the production cost per piece amazingly low.
- **CLEANLINESS**—clean fuel facilitates good "shop housekeeping," promotes morale and good health among workers, eliminates many causes of rejects.

These are the characteristics of GAS you'll find useful in any industrial heating application—these are the reasons why you will find your local Gas Company Representative so helpful when you need heat for processing.

MORE AND MORE...

THE TREND IS TO GAS

FOR ALL INDUSTRIAL HEATING

AMERICAN GAS ASSOCIATION

420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

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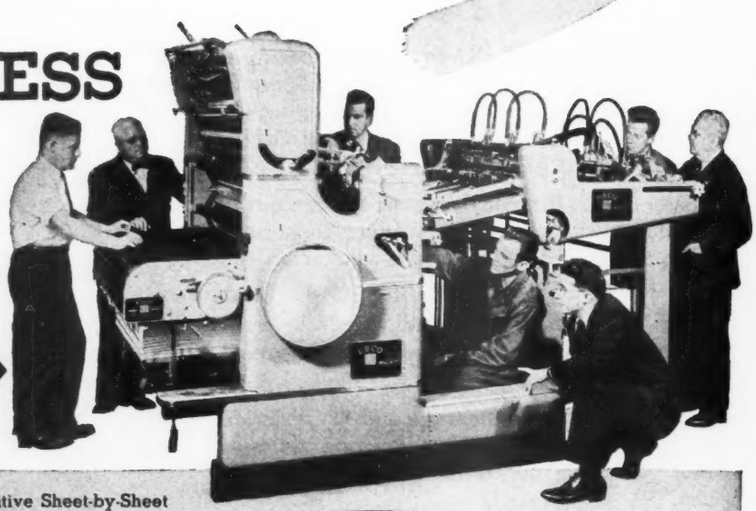

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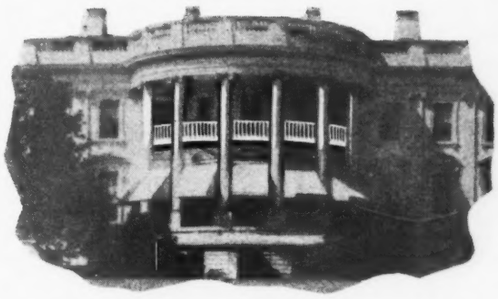

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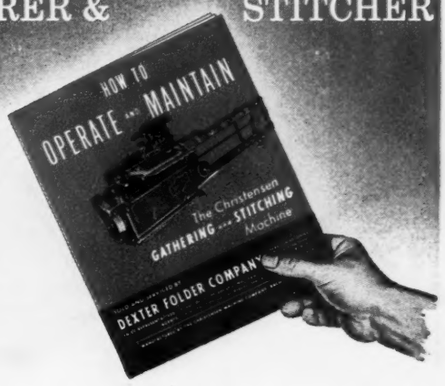

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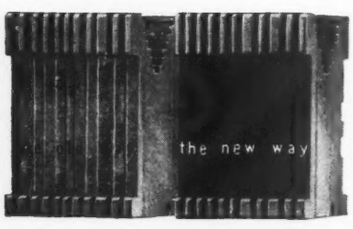

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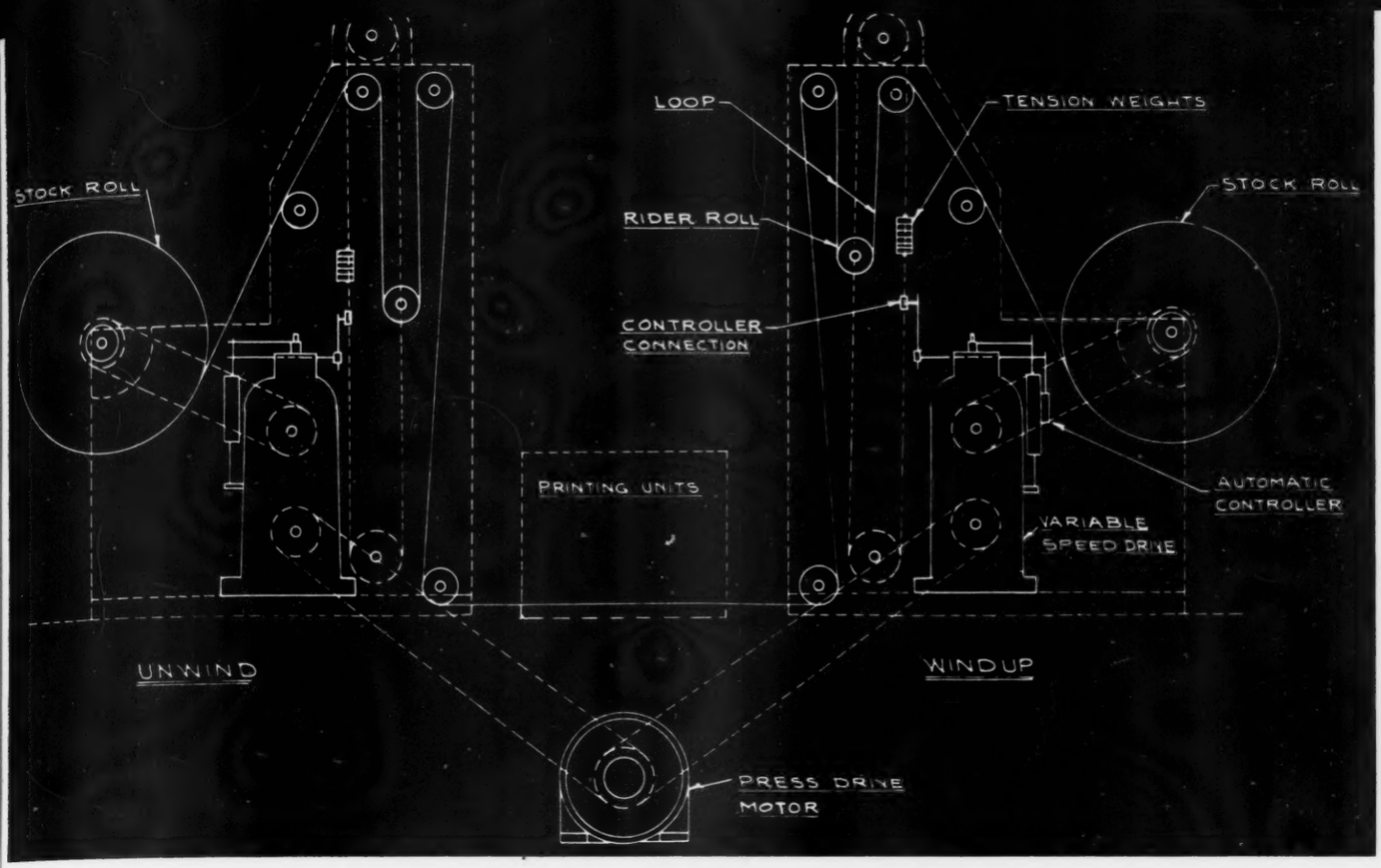


Fig. 2.—Schematic Diagram of Tension Velocity Processing equipment, or expressed in another way, this is a tension unwinding mechanism *and* constant velocity winder for use in connection with a web printing press or in web fabricating operations. The purpose of the device is to unwind roll stock at constant tension irrespective of winding conditions in the way of egg-shaped or flat-sided rolls, at any speed at which the press may be operated such as accelerating, decelerating or normal running speeds.
Upon studying this diagram it will be seen that the device will automatically increase the speed of the paper roll as its diameter is decreased. Simultaneously, it will decrease the speed of the windup roll as its diameter is increased. This is accomplished through a twin drive to two hydraulic controllers (one in each unit). The controllers are connected to the chain which supports the rider roll shown in the diagram. Any change in web tension at the unwinding unit is immediately reflected in the winding unit through the sensitive reaction of the rider rolls nestling in the web loop and which are free to move vertically according to plus or minus tension exerted upon them by the web. In turn, the rider rolls are connected by lever extending from the hydraulic speed controllers to the roll supporting chains.

Paper Tension

and its relation to register in web printing press and fabricating operations

By J. H. GEPFERT*

**Division Manager, Reeves Pulley Co., Cleveland, Ohio*

(Photos Courtesy Black Industries, Cleveland, Ohio)

TODAY'S printer is confronted by a multitude of basic business problems running the gamut from procuring paper stock, ink, labor, etc., to the fulfillment of the exacting demands of his customers for fine quality and accurate work.

One of the means used successfully to resist the advancing cost of materials and manpower has been the introduction of improved equipment. The adoption of mechanical printing and handling techniques has resulted in the high production so necessary to maintain a share of business in this highly competitive field.

In this discussion, we are primarily interested in the solution of some of the basic mechanical problems which beset the printer who has turned to the rotary type of printing equipment as a means for attaining maximum production. The adoption of rotary equipment has resulted in production speeds which can be attained in no other way. All of the processing can be done from rolls of stock which can be printed, perforated, punched and slit at high speeds and in continuous flow. In most cases, after the work has been done on the web of paper stock, it is then rewound on a roll for further processing.

It is important for the printer to realize that he is dealing with a material (paper) which changes characteristics and hence working quality, not only in terms of the various weights and types of paper and inks, but also with the weather (humidity in the air). To successfully process a material of this type at high speed, it is necessary to control the processing equipment so that all of the variations can be corrected and their bad effects in the processing eliminated.

To start with, the rolls of stock are received in many sizes, weights and types of paper. In addition, due to faulty handling by the transportation agent, some rolls are egg-shaped in form, are wound unevenly on the core which allows for telescoping of the stock, quite often have loose or baggy sections in spots, or are drum-tight in others. Some of the stock is high in moisture content, some is dried out almost to the point of brittleness; some has been processed previously, which may have introduced errors in spacing and register.

To obtain quality work, it is necessary to maintain perfect register in printing, whether it be in multi-part forms, or in

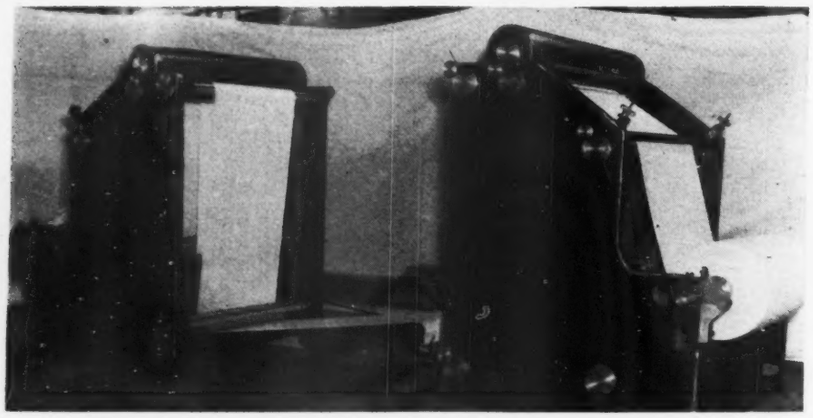


Fig. 1.—The illustration shows the Tension Velocity processing equipment for maintaining constant web tension in a printing press. For the purposes of this illustration, the printing press would be positioned between the unwinding and winding units. It is claimed this mechanism will handle 9 lb. stock up to and including tag stock. Actually, sponsor states, maximum web speeds at which the Tension Velocity Processing equipment will operate successfully are not known as yet. Fastest production speed at which equipment has been operated successfully is 1000 f.p.m. Experimentally, and without printing, the equipment has been operated at 3100 f.p.m. on fabric web material. Roll width capacity ranges from 6 in. up to 40 in. A larger machine is available—it will handle rolls from 36 in. up to 72 in. width.

color work, along with the control of the cut-off lengths, to permit production of a high quality job. In multi-part forms, the register must be good if the forms are to be of any use to the customer. In the case of color work, blurred or displaced figures bring down the wrath of the customer on the printer.

Changes in Fundamental Properties

To solve the problem of processing a continuous web of any material we must consider how the fundamental properties change and how the processing itself affects these properties. We know, for example, that all materials have the property of elasticity and that each has it to a specific degree. This means that you can apply a force to pull apart any material whether it is steel or paper. If one end of a steel bar is held fixedly and you pull with your fingers on the other end, the steel bar will elongate in exact proportion to the pull exerted on the bar by your finger. It is true that it would take a very sensitive instrument to detect this elongation, but it would definitely be there. If the same forces were used on a web of paper, you would be able to see with the naked eye the increase in length of the paper as you pulled it. All materials increase in length as the pull is increased on them, and bounce back to their original length as long as a specific value of pull or tension for the particular material has not been exceeded. This point is called the elastic limit of the material and if a pull or tension is put on the material greater than this value, the material will no longer go back to its original length, but will stay lengthened or deformed. If greater and greater values or pull or tension are exerted, finally the material will break.

In terms of the minute particles which make up matter, this means that when a material is stretched or pulled, we are applying a force which tends to pull apart material against the natural forces which tend to hold them together.

Key is Control of Length of Paper

In the case of paper, a material is being held together by the attraction of the small fibres of the stock from each individual fibre to all of the neighboring fibres. This means that when a web of paper is pulled or is put under tension the paper will stretch.

We also know paper will stretch or shrink. In other words, it will change length. This is the key to the entire problem of controlling the length of paper that is printed or cut off from a continuous web. Any change in tension in the paper actually changes its length. When the same value of tension is not maintained in various parts of the processing, the length cannot be maintained.

Most of these problems have been understood in a general way by printers. They have used various means at their disposal to change the tension in the web to maintain register. However, in all cases this was a correction that was made after the error was discovered. The correction had to be made on the basis of experience alone, which quite often led to over or under correction. The net result is there is never an exactly correct register when correction has to be made manually in the system since there is no way of determining exactly what correction must be made to fit each individual condition.

Web Tension in Rotary Press

In the case of rotary printing equipment, the tension of the paper web through the machine is determined by the difference in speed of the paper between the back end and the front end of the press at any instant of operation. You might think that if the paper was fed into the press at exactly the same speed as it was taken out, the paper could be processed with no tension whatever and this would take care of the problem. However, a little more thought will show that this is not true, since maintaining exact speed at these two points will not give exactly the same amount of paper, because, as we have discussed before, the paper may be under different values of tension at these two points and hence will have a different length.

To take care of the difference in length that occurs because of the condition of the paper and the atmospheric condition, it is necessary to apply to the web some tension which is greater than the variation which might exist in the paper stock itself. This value of tension can then take care of the baggy and tight spots in the stock roll, will feed a constant length of paper through the press, and wind it the identical length on the windup roll to maintain the exact length as it was printed.

Maintaining Constant Tension Value

The answer then to this problem is to maintain a constant value of tension in

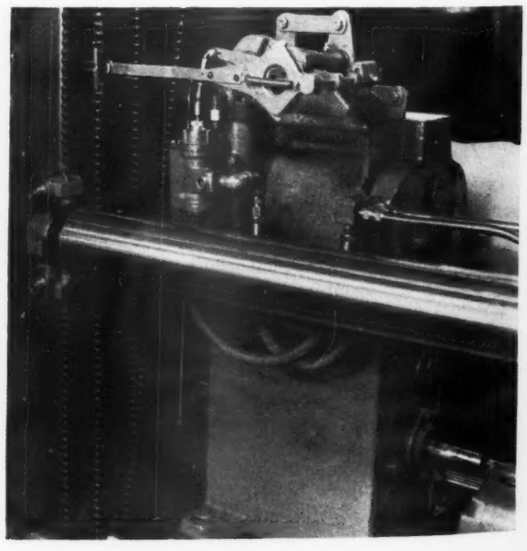


Fig. 3—Close-up of one end of rider roll showing anti-friction assembly. It is claimed these ball bearing rolls provide minimum friction resistance to permit the rider roll to float in vertical movement. Back of the rider roll is shown the speed controller, the hydraulic chamber of which is connected by lever to the rider roll chain.

the web throughout all of the processing that is done on the web from the stock roll to the finished product.

As we unwind paper from the roll, the speed of the roll must be increased in exactly the same proportion as the size of the roll decreased in diameter. As we rewind the paper on the windup roll we must decrease the speed of the roll as the roll builds up or increases in diameter. To maintain a constant value of tension in the web of the paper between these two rolls, we must automatically and continuously change the speed of the rolls as their diameters change. We must also correct for any length difference occuring in the stock roll because of differences in paper tension which exist there when the stock roll was made up. On the windup end we must maintain that same value of tension so the printed length remains the same after the finished web is wound on the roll.

Faulty Thinking

In most presses of this type a feeding or measuring roll is used with the idea of feeding into the press a measured amount of paper for each revolution. As outlined above, this thinking is faulty, because there cannot be a given length of paper fed into the press unless the tension is constant.

Usually, the stock roll is unwound against a friction brake on the stock roll shaft and the paper is pulled off the stock roll against this brake by the measuring roll and snubbing roll. On the windup end, a slip clutch is used with the thought that the clutch will slip in proportion to the difference in speed between the driving system and the windup roll as called for by the change in diameter.

The system of using a brake or clutch is basically unsound, because it is impossible to maintain an adjustment on a friction surface which will exactly take care of the differences in speed required, even though almost continuous adjustment is made.

At the same time, when a clutch or brake is used, it is impossible to make a setting which will exactly carry the roll when it is in rotation and also start or stop the roll when the press is started or stopped. Consequently, every time the speed of the press is changed, or the press is started, stopped or jogged, this system entirely loses control and faulty register is obtained. In fact, with this type of system, the printer must continuously make adjustment or he will be completely out of register at all times; but even when he does make repeated adjustments, he can only attempt to correct errors in register *after* they occur.

It is possible to use a variable speed drive between the press and the stock roll and between the press and the windup roll, so that the rotation of the rolls can be adjusted to maintain the exact speed difference between the two ends for tension control. However, it would take continuous adjustment of the two drives in order to accomplish this (although this system eliminates most of the difficulty encountered with the clutch) we still are faced with the problem that the operator cannot make the proper adjustment until after faulty register has occurred.

Fully Automatic Tension Control

This general thinking leads us to the basic conclusion that the only possible successful tension control system must be fully automatic in operation and must be sensitive enough to compensate for any change in tension in the web, regardless of how it is brought about.

To control the tension in a web of paper or any other material, it is necessary to have a means for measuring the tension in the paper, a means for changing the speed relationship between the unwind and windup rolls to correct the tension, and a means for stopping the correction action after the tension has been restored to its former value. In addition to this, it is necessary to have in the system, a means for adjusting the value of tension that is to be used for any particular grade or type of paper or condition of the stock rolls in general.

Measuring Tension

By far the most accurate means of measuring tension, is to take the indications from the material itself. As outlined above, any value of pull or force on the web of material affects the length of the material. Since this is true, if we insert a loop in the web and place a rider roll in this loop, the amount of weight on the rider roll will determine the length of the loop. By making a connection between this rider roll to a controller which operates when the length of this loop changes, and controls the speed of a variable speed drive which turns the stock roll, we have the means for turning the stock roll at exactly the speed required to maintain the instantaneous length of the loop for any value of weight on the rider roll, hence, the tension on the web.

Compensating Through Roll Diameter

At the same time, the length of the loop will also vary in direct proportion to the diameter of the stock roll, because the distance from the point of contact of the web on the stock roll to the feed roll of the press, remains a constant value for any value of tension. Consequently, the position of the rider roll or the length of the loop is in direct proportion to the tension and velocity of the web that is required to maintain the web in equalibrium at any instant.

Using this principle, we can make what is known as a floating roll or compensator stand. This consists of idler rolls which allow the web to loop between them, and the travelling roll which rests in the bottom of the loop. In addition, we can use a connection from this rider or compensating roll to operate the hydraulic controller on the transmission which drives the unwind roll.

Controller Responds Sensitively

The hydraulic controller is a very sensitive element, which takes practically no power to operate and which sets a speed for every position of the operating lever. For all positions down to a thousandth of an inch of movement, a specific speed of the Reeves adjustable drive is set, which means that every position of the floating roll which indicates changes in velocity or tension in the web results in a corresponding speed in the driving speed of the stock roll.

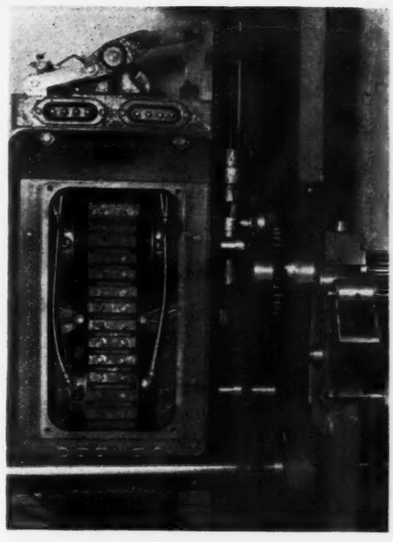


Fig. 4—Hydraulic speed controller with case back cover removed to expose interior construction.

When this exact system is also applied to the windup end, we have the same accuracy of control in winding the web on the roll.

Basically, then, we can provide a system which feeds the web of paper into the press at a controlled tension and velocity and winds it up after it has been printed or processed, at the same tension or velocity. At the same time, adjustments in the amount of tension used can also be made by simply changing the weight on the compensator roll.

Web Under Uniform Tension at All Times

It is well to note that this system not only can be operated at very high speeds, but also maintains control for any operating speed that may be set on the press from the stock condition to the maximum speed. Since indication of tension is taken directly from the web itself, all conditions of accelerating, decelerating and jogging, do not affect the operation of the control and consequently the web is under the same uniform tension regardless of the general operation of the press itself.

The installation of this control equipment adds practically no extra load to the main drive system of the press, since the drive and control system are of high efficiency. At the same time, the extra load lost at the friction clutches and brakes has now been removed which gives an adequate margin of extra driving capacity for the press, even with the equipment added.

The entire system is simple in operation and is also simple from a maintenance standpoint. The automatic controller is self-contained and consists of a small pilot motor, pump, oil supply cylinder and valve assembly.

JOSEPH ROSENBERG

President, American Photo-Engravers Association. He is associated with Pioneer-Moss, Inc., Photo-Engravers, New York.

FRANK J. SCHREIBER

APEA's Commissioner, and Editor of *The Photo-Engravers' Bulletin*. Recently succeeded Commissioner Louis Flader.

CLARENCE G. ROHRICH

Secretary-Treasurer, American Photo-Engravers Association. He is President and General Manager of Akron (O.) Engraving Co.

The Photo-Engravers' Convention

SPEAKING of photo - engraving equipment and supplies, it appears that the number of exhibitors at this year's October convention of the American Photo-Engravers Association will exceed those exhibiting at the Buffalo convention in 1947. At the Buffalo meeting, 41 exhibitors occupied 59 booths. In Cleveland its 42 exhibitors with 65 booths.

According to Cleveland General Chairman Alex Dempster, the pre-registration figure of 400 executives (as of August 25) presages an attendance of approx. 1000 at the Cleveland convention.

These introductory remarks are intended to convey to our production and mechanical executive readers that there still is a lively activity in the photo-engraving industry with respect to modernization not only of equipment but of techniques as well. The increasing use of pictures by publications, newspapers and buyers of printing generally has caused equipment makers to accelerate their efforts towards furnishing the tools to accomplish results.

Continuing the discussion, perhaps the increasing use of rotogravure and offset have had something to do with the "perking up" of the photo-engraving industry and the letterpress printer. Just at the moment, there is the problem in the photo-engraving industry of holding its own against competing processes. This can only be done by adopting latest equipment, using the latest methods and by training personnel who will employ both to the limit.

Representative executives in the photo-engraving industry not only have encouraged development of modern equipment in the way of cameras and other equipment items but they are also conducting a substantial cooperative research program at Battelle Memorial Institute in Columbus. (See accompanying article entitled: *Progress in Photo-engraving Research*).

Printing Equipment Engineer urges all of its executive readers, particularly from the newspaper field, to visit, at least, the equipment and supplies exhibits during the 1948 convention of the American Photo - Engravers Association, Hotel Statler, Cleveland, October 7, 8 and 9.

ALEX DEMPSTER

President, Eclipse Electrotype & Engraving Co., Cleveland, is President of the Central Photo-Engravers Association, sponsors of the annual convention of the American Photo-Engravers Association

Mechanical Executives Are Urged To Attend

ONE of the pressing problems among most newspaper printing plants is the need for modern equipment and the training of personnel to produce photo-engraving for r.o.p. color work. Color plates for newspaper work should be made according to the arbitrary requirements of the process. When properly executed, newspaper photo-engraved color work can be beautiful and attention-compelling. At the moment newspaper production and mechanical executives, photo-engraving foremen and their staffs are in need of education both in technique and equipment. To bolster this observation, one only needs to look at some of the "color" work being produced currently. We don't mean to infer, either, that all r.o.p. color is poorly executed. Many newspapers have conquered the technique. Largely, however, most newspaper plant executives are in need of further education.

It is for these reasons that *Printing Equipment Engineer* urges all newspaper executives having a hand in color work to attend the equipment exhibits at the convention of the American Photo-Engravers Association at Hotel Statler, Cleveland, October 7, 8 and 9. The Euclid ballroom and the Pineroom have been fitted entirely for the exhibits.

There isn't any doubt but what the majority of newspaper photo-engravers and supervising executives will acquire considerable knowledge respecting modern photo-engraving methods if they will attend the Association's exhibits at Hotel Statler, Cleveland, October 7, 8 and 9.

Progress in Photo-engraving Research

INCREASED research efforts on the electrolytic etching of copper and on the deep etching of copper employing an electrostatic dusting technique for sidewall protection will characterize the broad research program of Photo-Engravers Research, Inc., for the next few months. The organization will also begin immediately the preparation of a manual on the ferric chloride etching of copper.

Decision to emphasize these phases of the program was made by the Board of Directors of Photo-Engravers Research, Inc., meeting in Columbus, Ohio, recently. The increased activity is expected to result in practical working knowledge regarding these processes being available for reporting to member concerns at the next annual meeting of members. This meeting is scheduled to be held in Cleveland on October 6.

Attending the board meeting were David Orans, Quality Engraving Co., New York, N. Y., president; Gene Meston, Capital City Printing Plate Co., Des Moines, first vice president; Ralph Yeomans, Brigdens Ltd., Toronto, second vice president; George Hoffman, Dixie Engraving Co., Savannah, Ga., secretary-treasurer; Phillip Ahrenhold, Conde Nast Engravers, Inc., New York, N. Y.; Walter Stearns, Stearns Engraving Co., Chicago; Everett Bierman, Charlotte Engraving Co., Charlotte, N. C.; and J. Homer Winkler, Battelle Institute, executive director.

A financial report to the board showed that 65 firms of the United States and Canada are now affiliated with Photo-Engravers Research. The membership application of another Canadian firm received during the meeting.

One action of the group was approval of the distribution and sale of the P.E.R. Copper Colorimeter by Modern Photo-engraving Publishers. This instrument makes possible quick and easy determinations of the copper content of ferric chloride etching solutions. Photo-Engravers Research, Inc., is making the device available to all photo-engravers and is not to receive any commissions or fees through the sale of the device.

The research organization of photo-engraving firms has a three-year contract with Battelle Institute, Columbus, Ohio, for its laboratory work. It has been conducting research at Battelle since its organization in 1945.

To Meet Jointly

Recommendation of the Mechanical Committee of the Pennsylvania Newspaper Publishers' Association to invite mechanical department executives of New Jersey Press Association member newspapers to the 1949 PNPA Mechanical Conference has been approved. This approval was granted by the PNPA Executive Committee which also approved the suggestion of the New Jersey Press Association group and the PNPA Mechanical Committee that three members of the NJPA be designated to attend the PNPA Mechanical Conference meetings and to help prepare the 1949 conference program scheduled for the Penn Harris Hotel, Harrisburg, on Friday and Saturday, April 1 and 2.

This joint action of the Pennsylvania and New Jersey groups will bring together into one conference the newspaper executives of 160 daily newspapers in two states, plus a large number of weekly publications. Also, mechanical department executives of Maryland and Deleware newspapers are accustomed to participate in this conference, making it in effect, a four state conclave.

Chairmanship of the Pennsylvania committee is in charge of Edward O. Davies, Mechanical Superintendent of the Harrisburg (Pa.) *Patriot* and *The Evening News*. Neal E. Dyer, Mechanical Superintendent of Camden (N. J.) *Courier-Post* is chairman of the New Jersey mechanical group.

Attendance at the last PNPA Mechanical Conference exceeded 400.

Exhibitors

At Convention of American Photo-Engravers Association, Hotel Statler, Cleveland, October 7, 8 and 9.

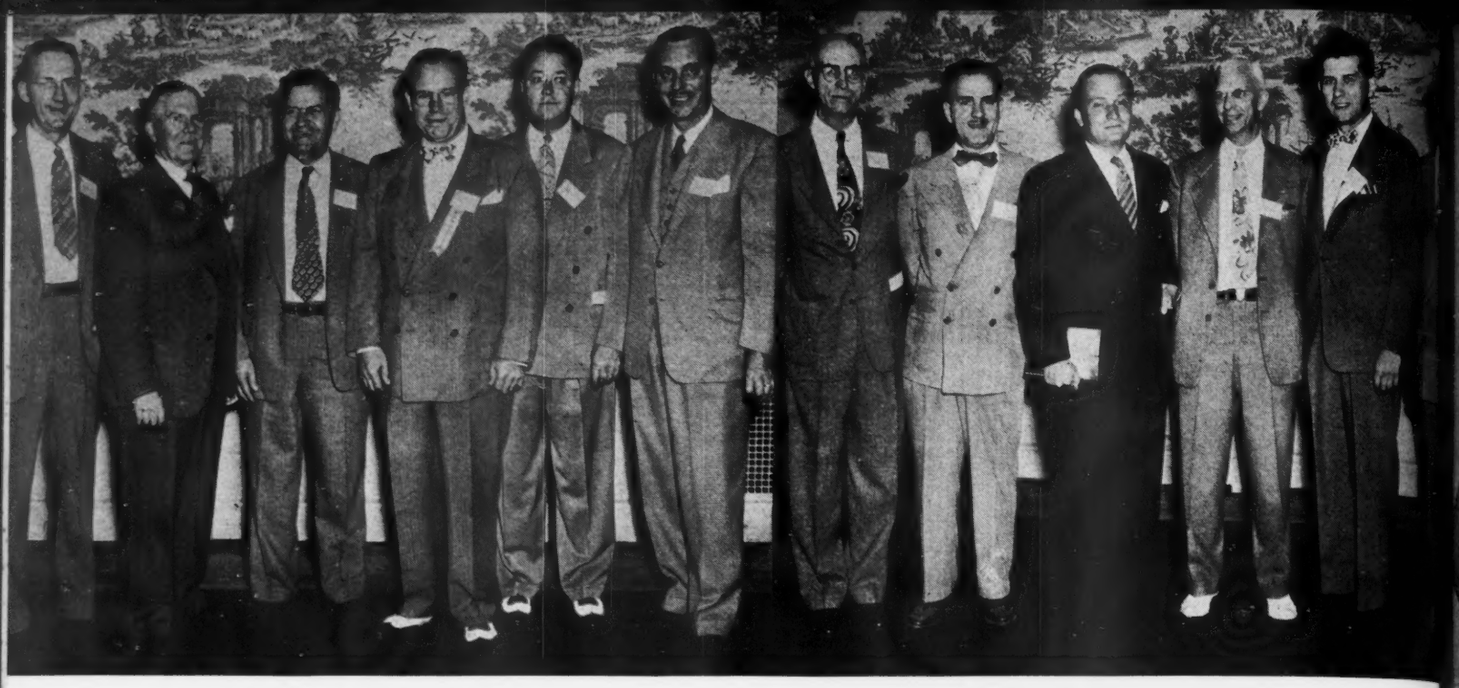
American Type Founders	**Elizabeth, N. J.**
Vandercook & Sons	**Chicago**
Atlantic Zinc Works, Inc	**Brooklyn, N. Y.**
The Strong Electric Corp	**Toledo, O.**
Master Etching Machine Co	**Wyncote, Pa.**
R. R. Robertson Co	**Chicago**
E. T. Sullebarger Co	**New York, N. Y.**
H. Schmidt & Co	**Chicago**
U. S. Stoneware Co	**New York, N. Y.**
Macbeth Arc Lamp Co	**Philadelphia**
Buckbee Mears Co	**St. Paul, Minn.**
Harold M. Pitman Co	**Chicago**
Mallinckrodt Chemical Works	**St. Louis, Mo.**
Consolidated Photo-Engravers Equipment Co	**Chicago**
Bridgeport Engravers' Supply	**Bridgeport, Conn.**
Moore Laboratories	**Detroit**
Craftint Mfg. Co	**Cleveland, O.**
Irwin Mfg. Co., Inc	**Garland, Pa.**
Chemco Photoproducts Co	**New York, N. Y.**
Imperial Type Metal Co	**Philadelphia**
Philip A. Hunt Co	**Brooklyn, N. Y.**
General Plate Makers Supply	**Chicago**
Phillips & Jacobs	**Philadelphia**
Electronic Mechanical Products Co	**Atlantic City, N. J.**
Rogers Isinglass & Glue Co	**Gloucester, Mass.**
Wells Mfg. Co	**South Bend, Ind.**
Lauck Mfg. Co	**Berkeley, Calif.**
National Steel & Copper Plate Co	**Chicago**
John Royle & Sons	**Paterson, N. J.**
Toronto Type Foundry Co., Ltd	**Toronto, Can.**
Edes Mfg. Co	**Plymouth, Mass.**
Printing Arts Research Lab., Inc	**Santa Barbara, Calif.**
Eastman Kodak Co	**Rochester, N. Y.**
Max Levy & Co	**Philadelphia**
Bourges, Inc	**New York, N. Y.**
Wesel Mfg. Co	**Scranton, Pa.**
G. C. Dom Supply Co	**Cincinnati, O.**
Kemart Corporation	**San Francisco**
Graphic Arts Appliance Corp	**Aurora, Ill.**
Philip Lochman & Co	**Evanston, Ill.**
Jos. Gelb Co	**New York, N. Y.**
ANSCO	**Binghamton, N. Y.**

Cooperative Campaign

An advertising program designed to promote the use of printed advertising and to emphasize the effectiveness of color as a sales factor, will be launched this fall by the National Association of Printing Ink Makers.

Full-page ads, in color, will run in advertising trade publications. The ads will point out the advantages of printed advertising and will stress the fact that only in print is it possible for the advertiser to show his product in natural color, as the customer sees it on dealers' shelves.

Responsible for the campaign, which is the first ever sponsored by the Ink Association, is that organization's publicity committee. It consists of John Ellison, chairman President of Lewis Roberts, Inc.; H. Bettye Stout, Advertising Assistant, General Printing Ink Division of Sun Chemical Corporation; and George Welp, Advertising Manager, International Printing Ink Division of Interchemical Corporation. David H. Sloane is Secretary of the Ink Association.



On the Speakers' Platform at Opening Session of the XXIXth Annual Convention, International

From left to right the people shown in the strip above are:

Russell Olander, Editor, *Share Your Knowledge Review*, and Manager, Olander Press, Glen Ellyn, Ill.

Fred C. Baillie, now Second Vice President; also Superintendent, Canadian Bank Note Co., Ottawa, Can.

Perry R. Long, First International President; currently he is General Manager, Bryan-Brandenburg Co., Los Angeles.

Chester L. Klien, Convention Co-Chairman, and General Superintendent, Color Marketing, Cleveland.

Gradie Oakes, now Intl. President; also President and General Manager, Color Process Plate Co., Chicago.

John L. Reay, Intl. Representative-at-Large. Business-wise he is Executive Vice President, Braden-Sutphin Ink Co.

MacD. Sinclair, General Convention Chairman and Editor *Printing Equipment Engineer*.

J. Homer Winkler, now Intl. Third Vice President. He is Technical Adviser to Graphic Arts Dept., Battelle Memorial Institute, Columbus, O.

Rabbi Joseph Nodell, Assistant Rabbi, The Temple, Cleveland.

A. Gordon Ruiter, now Immediate Intl. Past President. Is Super-

XXIXth Convention

of International Association of Printing House Craftsmen dominated by technical clinics on letterpress, offset, gravure, siderography and electronographic printing

By STAFF WRITERS

MASS singing of *America* and *God Save the King* gave international flavor to the opening session of the twenty-ninth annual convention—of the International Association of Printing House Craftsmen at Hotel Cleveland, Cleveland, Sunday evening, August 8. The religious note was sounded by Rabbi Julius Joseph Nodell of the Cleveland Temple who offered the invocation MacD. Sinclair, in his capacity as General Chairman, presided.

Wayne Gaspar, President, Cleveland Club of Printing House Craftsmen, bid the delegates and guests from all over the United States and Canada a hearty welcome to the City of Cleveland, to which Gradie Oakes, Chicago, in his capacity as First Vice President of the International, responded. Chester L. Klien, Co-Chairman of the Cleveland committee, introduced Intl. President A. Gordon Ruiter, Boston, who then assumed the chair. He in turn introduced others seated at the speakers' table, comprising members of the International official board, and leaders of the Cleveland organizations which cooperated to make the convention the great success it proved to be.

Tribute was paid to Craftsmen who departed during the year since the 1947 convention held in Saratoga Springs, N. Y. Two numbers were sung by a quartet and appropriate remarks were made by President Ruiter.

Hon. John J. Deviny, Public Printer of the United States, guest speaker, who at two different conventions had been elected president of the International Association of Printing House Craftsmen and had been its first treasurer in 1919, gave an inspirational address on *The Craftsman's Heritage*.

Extra Attractions

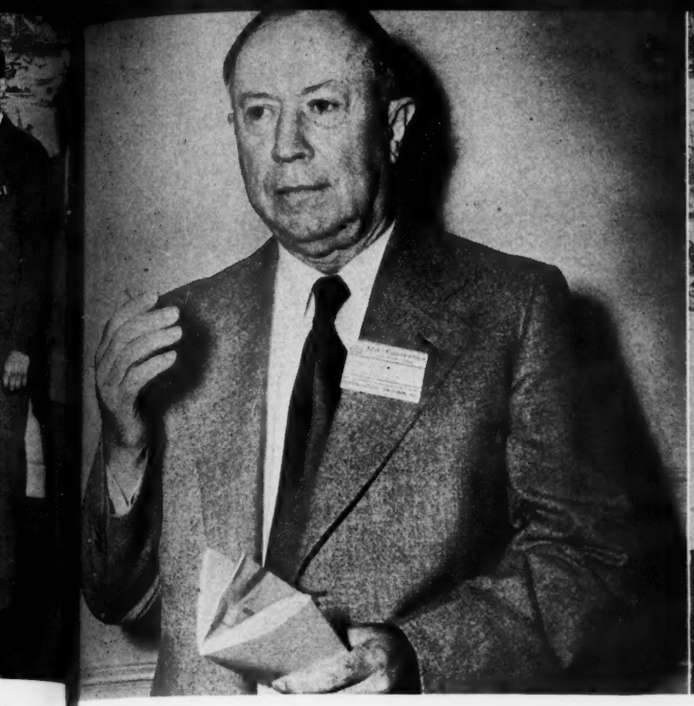
Of the trips made by delegates to Cleveland Graphic Arts establishments, the largest attendance (approx. 250) was at the plant of Harris-Seybold Co. on Tuesday afternoon. As the buses arrived at the plant, Harry A. Porter, Vice President, greeted the visitors who were then divided into groups of 10 and 12 each, and piloted through the offices and shop departments by guides in accordance with a prepared schedule.

Other plant visitations were made to the establishments of Chandler & Price Co., Copifyer Lithograph Corp., Braden-Sutphin Ink Co., Art Gravure Corporation of Ohio, The M. L. Abrams Co., Turner Printing Machinery, Inc., and Western Newspaper Union.

The Western Newspaper Union provided a tabloid convention daily newspaper for three days of the convention free to delegates and other visitors. The tabloid made a hit.

Samuel's Financial Report

Reports of all officers, excepting that of the president of the International, were distributed in printed form to delegates and visiting Craftsmen at the convention. Edward T. Samuel, Treasurer, reported that during the fiscal year expenses were $34,567.23.



Association of Printing House Craftsmen, Sunday Night, August 8, Hotel Cleveland, Cleveland

intendent, Forbes Litho and Printing Co., Boston.

Wayne Gaspar, Convention Co-Chairman and President, Cleveland Craftsmen's Club. He is Superintendent, R. E. May, Inc., Cleveland offset-lith platemakers.

Pearl E. Oldt, Executive Secretary, Intl. Association of Printing House Craftsmen, Cincinnati.

Hon. John J. Deviny, U. S. Public Printer, Washington, D. C., who addressed convention on *The Craftsmen's Heritage*.

Walter F. Schultz, Past Intl. President. He is Associate Editor, Farm & Ranch Pub. Co., Dallas, Tex.

Mrs. M. L. (Ruby) Abrams, Chairman Ladies Committee.

Thos. P. Mahoney, Convention Program Chairman. Just recently he became Production Executive for American Color Process Co., Cleveland. President Oakes has appointed him Educational and Research Commission Chairman.

Russell J. Hogan, now First Intl. Vice President. Vocationally, he is Plant Manager, The Blanchard Press, New York, N. Y.

Edward T. Samuel, Intl. Treasurer. Is proprietor of Samuel & Walker Printers, Cleveland. Was Chairman Convention Printing Committee.

Membership

Secretary P. E. Oldt, whose offices have been established in Cincinnati, reported that membership of the 78 clubs aggregates 10,436, an increase of 806 during the year. Seven new clubs were added, namely: Jacksonville, Fla., Cedar Rapids, Ia.; Oklahoma City, Okla.; London, Can.; Southwest Idaho; Syracuse and Watertown, N. Y.; and Santa Ana, Calif.

Officers Installed

Officers elected at the final business session of the convention Wednesday afternoon were installed at the convention banquet held in the ballroom Wednesday evening. The Hon. John J. Deviny, Public Printer of the United States, a past-president, himself, officiated.

Retiring President Ruiter was presented with the past-president's jewel in a ceremony conducted by Perry R. Long, Los Angeles, first president of the International.

Gradie Oakes, Chicago's newly elected international president, upon assuming office, was presented with a token of esteem by his own club, Joseph Skach, president, Chicago Club, doing the honors.

850 Registrations

MacD. Sinclair, General Convention Chairman, used the opening Sunday night session as an occasion to pay homage to men and women who served on committees whose work made the Cleveland convention an outstanding success with more than 850 registrations. The convention itself, at its final business session on Wednesday afternoon adopted resolutions thanking the Cleveland convention committee and others for their activities in handling the convention.

An amusing entertainment feature was provided by Neil B. Powter, Montreal Club, in costume who composed and rendered a reading on *That Crazee Printer Feller*.

The convention voted to hold its 1949 convention in San Francisco.

Club Management Clinic

At several sessions of the convention, methods employed by Printing House Craftsmen to conduct their own monthly meetings were discussed. The Monday evening session over which Vice President Fred C. Baillie, Ottawa, Can., presided, was devoted to a consideration of club management affairs. *The Care and Feeding of Speakers* was presented by Elmer Leach, Des Moines; and the topic *Stimulating Attendance at Club Meetings* was discussed by Charles B. Weimer, San Antonio, Tex.

Club Bulletin Contest

Results of the annual club bulletin contests were announced by Lee Augustine, Cincinnati (Printing Machinery Co.), who provided three trophies for winners, first place being awarded to Chicago Club; second place to San Francisco Club; third place to Philadelphia Club. In the contest of clubs with memberships under 125, first place award was won by Utica Club; second place by Honolulu Club, and third place by Ottawa Club.

Printing Week Preparations

At two sessions of the convention, the topic of observance of Printing Week during the third week in January each year was discussed. The major discussion occurred at the Monday afternoon regular business session at which reports of results achieved during the campaign ending January 17, last, were given under the leadership of Gordon J. Holmquist, Los Angeles, chairman of the Public Relations Commission of the International Association. He called upon Edward W. Stoehr, Newark Club, and Amadeo R. Tommasini, San Francisco Club, to supplement his reports by telling of successes achieved in their respective cities. Booklets—equivalent to

Typographic Clinic—Chairman Russell J. Hogan (center) presided. At the lectern is Amadeo R. Tommasini, Designer and Production Manager, University of California Press. He is also President of the San Francisco Club. He spoke on *Good Typography—Setting It Right at the Right Price*. At right is E. A. Damon, Asst. Sales Manager, American Type Founders, who discussed *Type Speaks*.

campaign manuals—were distributed among the Craftsmen containing suggestions and instructions concerning the manner in which city-wide campaigns may be conducted in preparation for the 1949 observance of Printing Week, set for the week of January 16 through 22.

Typographic Clinic

AT THE Monday forenoon session, the technical features of the convention began in the form of two clinics conducted simultaneously in the Red Room and in the Ball Room. One to consider typographic procedures was presided over by Russell J. Hogan, New York, second international vice-president, and the other, presided over by President Ruiter, considered pressroom operations.

Composing Room Alterations and Costs

Amadeo R. Tommasini, Production Manager, University of California Press, San Francisco, presented procedures followed in the California plant covering the design of typography for the miscellaneous work done therein including commercial advertising, newspaper, book and job production. He had prepared charts for the occasion, specimens of forms used in normal procedures besides enlarged examples of work done, to illustrate his talk. He said that primarily the aim of typographic art was to "transform into a book or other finished product, the manuscripts of authors." To achieve this purpose, he said a production manager has men, machines and methods which he must use to the greatest advantage, hence he must know how to plan his work and execute his plans.

"Careful planning is essential to success in producing good typography," said Mr. Tommasini. "That requires analysis of the copy to determine what is unusual about it, after which measurements are to be decided upon, type selected and marked on a layout, so that when the copy is sent into the composing room, instructions and copy are clear to the men assigned to do the work. In these days when hour costs in the composing room—including all items of expense—run from $6 to $8 an hour, it is not good management to send copy to the shop that is confusing to high-priced workers."

He advocated that if copy is not legible or is badly marked up that it is cheaper to have a girl in the office retype it than to send it to the composing room to be deciphered by the compositors. This point became the topic of debate during the discussion period, one Craftsman from the floor, questioning why the printing house doing the job should want to spend its money to make copy clear in order to save money for a customer who does not show enough interest in his own costs to provide good copy. Mr. Tommasini replied that the house should have its own standards of high quality to want to do a better job, and he also argued that clear copy, or retyped proofs that had been marked up carelessly by authors, enable the layout man to do his work more intelligently. One man volunteered the information that in a mail-order house, a new policy of retyping badly marked-up proofs showed a saving of 22 per cent in alteration costs. Previously, the proofs as marked up by authors had been sent to the printers "as is."

Mr. Tommasini advised that a modern

Some Craftsmen Personalities Attending the XXIXth Annual Convention, International Association Printing House Craftsmen, Hotel Cleveland, August 8, 9, 10 and 11.

1—Craig Spicher, Research Dept., Miehle Printing Press and Mfg. Co. Carl Denman, Sales Promotion Manager, J. M. Huber, Inc., F. D. Mills, Superintendent, Kable Bros. Co., Mt. Morris, Ill. Mannie Hubbell, Production Manager, Neely Printing Co., Chicago.

2—Edward H. Christensen, Production Manager, Central Typesetting and Electrotyping Co., Chicago and Lee Augustine, Vice President, Printing Machinery Co., Cincinnati.

3—Colorfully, Madame Ethel Schneider (wife of William Schneider, Pressroom Supt. of Cleveland's Wm. Feather Printing Co.) addressed ladies (some men, too) during convention. Her subject was *A Trip To the Stars*.

4—Alfred R. Bourges, Bourges, Inc., New York, N. Y. and Prof. Frederick W. Mackenzie, London County Council, School of Photo-Engraving and Lithography, 6, Bolt Court, Fleet St., London E.C.4, England.

5—Charles B. Weimer, Secretary-Sales Manager, Clegg Company, San Antonio, Tex. Basil Parsons, Secretary, Thomson National Press Co., Franklin, Mass. Parsons served as chairman of convention's nomination meeting which convened at 12 m., Tuesday-Wednesday, Aug. 10-11 with adjournment at 2 a.m. At same meetings, adjournment occurs at 5 a.m. Robert R. Pollock, Sales Manager, Godfrey Roller Co., Philadelphia; new Fourth District Intl. Representative.

6—George Sathre, Cleveland Manager for National Lead Co. William Saunders, jr., Production Manager, Magazine and Periodical Pub. Co., New York, N. Y. Frank J. Kuhar, Cleveland, National Lead Co.

7—Norman Mack, Technical Director, Roberts & Porter, Chicago. George Kearsley, Director of Planning, Hambleton Co., Inc., Wilmington, Del. Clarence Ritter, Printing Dept., Plough Chemical Co., Memphis, Tenn. F. W. Baumann, Asst. to Production Manager, Government Printing Office, Washington, D. C.

8—Don Crews, Vice President, Sam'l Bingham's Son Mfg. Co., Chicago. Arthur Fiebert, Production Manager, Prompt Printing Co., Cleveland. John L. Reay, Executive Vice President, Braden-Sutphin Ink Co., Cleveland.

9—Jack Hagan, Western Manager, Electric Boat Co.'s Printing Machinery Div., Chicago. Frank E. Swanberg, Director of Typography, Speigel's, Inc., Chicago. V. A. Friese, Assistant Production Manager, Regensteiner Corp., Chicago.

10—Dave Walker, Color Technician, Detroit Colortype Co. Guy L. Boyd, Asst. Sales Manager, C. P. Lesh Paper Co., Indianapolis. C. C. Swift, Representative, Sam'l Bingham's Son Mfg. Co., Indianapolis.

11—Extreme left: W. D. Will, Publisher, *Printing Equipment Engineer*. John J. O'Neill, Advertising Manager and Wm. H. Thorn of *Inland Printer*. Robert F. August, Triangle Ink & Color Co., New York, N. Y.

12—Gerald Hunter, Vice President, Matrix Contrast Corp., New York, N. Y. Norman P. Stein, Mrs. Bert (Grace) Adair, Charles Hollywell, all of Toronto, and Bert Adair of Manton Bros., Toronto.

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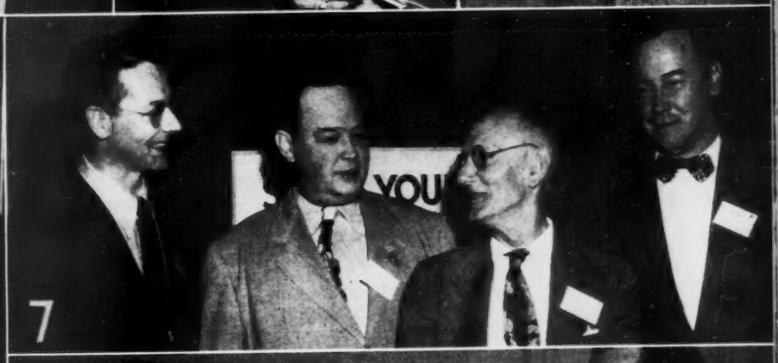
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Group of New Officers of International Association of Printing House Craftsmen—Not all of them were present when this picture was taken. (Front row, left to right): Russell J. Hogan, First Vice President; Gradie Oakes, President; Fred C. Baillie, Second Vice President; Pearl E. Oldt, Executive Secretary; A. Gordon Ruiter, Immediate Past President; J. Homer Winkler, Third Vice President. Not present was Edw. T. Samuel who was reelected Treasurer. President Oakes announced appointments as follows: Thos. P. Mahoney, Educational and Research Commission Chairman; Russell Olander, Publications Commission Chairman; Harold Crankshaw, Club Bulletin Contest Chairman; Gordon Holmquist, Public Relations Commission Chairman; Mannie Hubbell, Historian. District Representative appointments were made as follows: 1st: John R. Donohue, Boston; 2nd: Alfred T. Peters, Utica, N. Y.; 3rd: A. E. Loveland, Montreal, Can.; 4th: Robert Pollock, Philadelphia; Deputy, Harry Christopher, Baltimore, Md.; 5th: Ollie G. Fricke, Dayton; 6th: Fielding Utz, Milwaukee; 7th: William G. Cuddahy, Memphis, Tenn.; 8th: Elmer Leach, Des Moines, Ia.; 9th: Harold G. Gale, Fort Worth, Tex.; 10th: Chas. Richardson, Seattle, Wash.; 11th: Haywood Hunt, San Francisco; 12th: H. F. Edmonds, Los Angeles; 13th: Herbert Threlfall, Providence, R. I.; 14th: Nels Lundell, Minneapolis.

composing room should be equipped with plenty of material, conveniently accessible, and that pre-makeready testing devices should be supplied to the workmen so that when a type form leaves the composing room it "should be ready for the pressroom" without backtracking.

In his illustrative charts on type faces, he classified 41 type faces under five headings, namely: Venetian, Old Style, Modern, Transitional, and Contemporary. He indicated that selection of appropriate type faces for a particular job is dependent upon copy, paper to be used, color of ink, and tone of illustrations. Other factors that lead to his decisions on type selections, include "traditional typography, moderately modern typography, and decidedly modern typography."

In discussing values of plenty of tools in a modern composing room one Craftsman reported that in his composing room saws have been placed on wheels and are moved to places where compositors can plug them into outlets and use them. He reported saving of steps and time as a result. Chairman Hogan reported that in his shop he has installed equipment in the most convenient spots in the composing room to save motions on the part of the compositors which adds to efficiency and reduces costs.

Type Speaks, Damon's Topic

Type Speaks was the topic of an address by Everett A. Damon, assistant sales manager, American Type Founders. To illustrate his talk, he showed a blank sheet of paper with the remark that there was no message conveyed. Other sheets were used with marks as illustrations until he showed one sheet with a message in type, whereupon he said that while ink, paper and presswork are important, the images made by type are the things that are seen by the reader, and "type delivers the message." He then showed various specimens of typography to illustrate how distinctive faces of type must be used to make the message harmonious with its subject, and cause a favorable impression upon the reader. He defined type as "an interruption of space, so organized into familiar symbols as to convey intelligence and create emotional response." He stressed the idea that type is to paper and a message, what clothes is to a salesman, and that copy is to be dressed up, appropriately, with type that will match the theme of the message.

Group of Cleveland Craftsmen at XXIXth Craftsmen's Convention—(Seated) D. W. (Bill) Stock of Lawrence Electros, who functioned as Free Lance Convention Promoter; Wayne Gaspar, President of Cleveland Club and Superintendent, R. E. May, Inc. (Standing, left to right): Robert Pettet, Secretary, Cleveland Club and Superintendent The Caxton Co.; MacD. Sinclair, General Convention Chairman; Edward T. Samuel, Intl. Treasurer and Proprietor of Samuel & Walker Printers.

Pressroom Operation Clinic

Combination Pressroom Operation —Letterpress and Offset

J. TOM MORGAN, Columbus, Ga., president, Commercial Printers Inc., drew from his experiences as an operator of both a letterpress and offset printing plant to tell his audience when to use one or the other of the printing processes to achieve desired results. He indicated that copy—text and pictures—were the same "ingredient" in each process but that thereafter the "ingredients", as he called them, were different.

Broadly likening the ingredients that go into a printing job to those that go into the compounding of a prescription or a good can of soup, Mr. Morgan enumerated the particular items that go into a printing job. Arbitrarily listing them under six headings, he called them,

1. Copy
2. Camera
3. Plate
4. Paper
5. Ink
6. Presswork

Just as the ingredients going into a can of soup are controlled by the pure food and drugs act, those going into printing are also the same, but as the quality of the soups differ with the concern producing them, so too, does the quality of the printing vary as to the concern producing it and the way the ingredients of printing are combined.

1—Copy

Of the six ingredients going into letterpress printing and offset printing, all vary but the first, ***Copy***. Copy designed

Pressroom Operation Clinic—President A. Gordon Ruiter (left) presided. Second from left is J. Tom Morgan jr., President, Commercial Printers, Inc., Columbus, Ga. Third from left is E. Nymark, Plant Manager, MacLean-Hunter Pub. Co., Toronto. At extreme right is Stuart Braznell, President, The Braznell Co., St. Louis, who explained use of Photovolt instrument for *Photoelectric Measurement of Ink Flow from Press Fountain*.

for reproduction by letterpress had best be prepared in conjunction with the photo-engraver as should copy designated for the offset method of reproduction be prepared under the supervision and directly with the offset art department. In general, the commercial artist feels greater freedom of expression when he works in the medium of offset than when he prepares letterpress copy. He can combine line work, with halftones, laying in tints and screens to his heart's content for with the offset method there is greater latitude. The method permits more for the customer's money.

Color transparencies can be used for both processes yet their preparation varies with the process used. However, their use for large sized reproductions or large sized runs is pretty much limited to the offset method in Mr. Morgan's plant because of letterpress machine limitations.

Jobs already run through the plant in letterpress can be converted to offset printing in one of two ways. 1. Cellophane proofs may be run direct from the cuts and then deep-etch plates made from them; if necessary gangs may be made by contacting them and then going back to positives. 2. When a size change is ordered, then contact negatives are made from the cellophane proofs and they in turn blown up to the correct size. Of course, this increases the size of the screen dot—a factor that may or may not be objectionable.

2—Camera

Here we see a distinct cleavage of methods in working for the two reproduction techniques. For typographic work most of the line copy is shot on strip film and prepared for the metal. Halftones are shot in negative form and then combined, while the color work is prepared in positive forms and then sent on to the photo-engraver who finishes the job.

Camera work for offset, however, especially for the Lithochrome process is the place where Tom Morgan said the real flavor of the job is introduced. It is in the camera room where the separations are shot so that a minimum of hand art work is required. Work in the camera determines the type of a finished product the customer will receive. Work there will determine the type of plate the lithographic process will run.

3—Plate

Morgan feels that the letterpress process in his plant can produce long runs from electrotype plates. But when additional images or cuts are wanted, then the balance is thrown in favor of offset for the photo-mechanical reproduction of the image on the press plate and that method of ganging up images provides a more economical result for the customer.

Furthermore, when size enters the picture, letterpress is at a distinct disadvantage for the maximum size before the margin of diminishing returns sets in is said to be 14 in. by 17 in. whereas offset is bound only by the press size. Showing a sample of a four color job run on a two color press Morgan told of the contrasts in costs between this 35 in. by 45 in. subject in offset and typo.

4—Paper

The field of paper brought out quite sharply the difference between the two methods of reproduction for while coated stock could be used in both methods, the stock was not interchangeable. In offset, the grain had to be the long way with the stretch around the cylinder so that provision could be made for any change in size. The surface too, had to be prepared specially for offset for the water fountain is found on the offset press whereas the typographic press has none. The speaker found that humidity control in the pressroom was desirable with the paper being ordered to conform with the degree found most effective in the particular establishment.

In letterpress a great deal of care must be exercised in chosing the coated stock if 133 line screens are to be run. When an 85 line screen job is run, however, not so great attention is necessary in the selection of the coated stock.

Taken in the Press Relations Room by Adam Henri Reiser at the recent XXIXth annual convention of the Intl. Assoc. of Printing House Craftsmen is this group consisting of (left to right) Prof. Frederick W. Mackenzie, London County Council, School of Photo. engraving and Lithography, 6, Bolt Court, Fleet St., London E.C.4, Eng.; next is Allen C. Black, Supt. Preparatory Dept., Crowell-Collier Pub. Co., Springfield, O.; at extreme right is Ray Wright, Production Manager, Commercial Printing Div., Advertiser Pub. Co., Ltd., Honolulu, Hawaiian Islands. Standing is A. G. Fegert, Trade Press Editor and Reporter.

EVERS

appointed chairman of ANPA Mechanical Committee

EDWIN H. EVERS, Production Manager of the St. Louis Globe-Democrat, has been appointed Chairman of the Mechanical Committee of the Ameri-

can Newspaper Publishers Association by David W. Howe, ANPA President. Mr. Evers succeeds J. L. Stackhouse, Publisher of the Easton (Pa.) Express, who insisted upon retirement as Chairman. Evers was Chairman of the Program Committee of the Mechanical Conference held in Pittsburgh, July 19, 20, and 21, and has been a member of the Committee several years. He brings to his duties as Chairman of the Committee a wide and varied experience.

In offset, the paper must be made for the offset process to get the best results. In cardboard, the physical characteristic of bend around the cylinder while traveling through the press demands that the grain run the long way of the sheet or there will be trouble.

5—Inks

Ink for both processes must have good functional qualities. It must lay well on the stock, distribute evenly on the rollers used, fight water and still keep brilliant if used in offset, provide good mileage, trap well and cover well with a minimum amount of color. Inks that are bought for their low price often prove the most expensive in the long run.

6—Presswork

Pressmanship is an art. Not only must the pressman attend to his mechanical operation of the press but he has to concern himself in large measure with the working of the ink, the paper as well as the production speeds. After the job has been routed to best suit the process, there still remains the question of properly producing that job so that it is saleable. Regardless of how well the other departments have carried on their functions, flawless pressmanship still is desirable to transmit the sterling qualities that the other departments have imposed in the working of that job.

Morgan concluded with the repetition of his opening remark, that the proper compounding of the ingredients that go into a printing job will turn out the product beautiful.

During the question period, the following points were developed. Cellophane proofs are bought outside the plant where specialists in the line produce them on Vandercook presses.

About nine-tenths of the hand work of color correction is eliminated by the work in the camera in the Litho-Chrome process.

High costs are paid for the very special Kromekote papers and the like and to preserve the gloss of that paper it is advisable to use an ink that will permit the gloss to come through. A higher priced ink permits greater coverage with the use of smaller quantities and in that factor lies the savings in the purchase of higher priced inks. Figures were quoted showing that a 60c label ink took 40 lbs. to run a job while an ink costing $1.50 per lb. needed only 7 lbs. of the ink to run the same job. Some of the new blacks were so good that the sprays have been taken off the presses.

Press Production Control

The convention clinical program showed that its planners had in mind to present to visiting Craftsmen various types of control—production control, ink control and color control.

The topic of production control was presented by E. Nymark, plant manager, MacLean-Hunter Publishing Co., Toronto, Can. That plant is one in which 36 magazines and publications of various kinds are printed with circulations running from 300,000 and over, down to 3000. Mr. Nymark defined the functions of a production-control system and said that managers were concerned with three considerations:

How the work can be printed most economically.

What presses will be available at the required time.

When the work must be completed.

Plant operation and control is divided into four main categories: 1—Administration, 2—Line supervisors, 3—Staff inspectors, and 4—Equipment Maintenance Dept. Outlining the type of work produced in the plant Nymark told of the publishing and newspaper work produced, as well as the miscellaneous commercial work carried out. This required not only rotary presses but flat beds as well.

While the control of this plant rested in the hands of a Production Department and Superintendent along with foremen in the various departments years ago, and while that in turn finally spread to an assistant to the superintendent later on, it was found that the set-up worked on effect rather than on the cause.

Experience then dictated the advisability of divorcing the planning function from the administrative function. How far to go in this direction, however, is determined by the laws of diminishing returns for the particular plant under observation.

Many times absolute failure ensues when a ready-made plan taken from successful operation in one plant is attempted in another and simply fails to fit into the specific plant.

Any plan must be tailored to fit into and correlated to act on the problems of the plant.

Administrative

The person in control of this department must possess four main qualities. 1. He must have good control of the language so that he may transmit instructions in a clear, concise manner. 2. He must be amiable and able to approach people without ruffling their feelings. 3. He must have an understanding of the methods employed in production and 4. He must possess a generous amount of salesmanship.

Pre-planning to the end that the best possible layout for the running of the subject is part of the administrative set-up and plays an important part in this field.

Line Supervisors

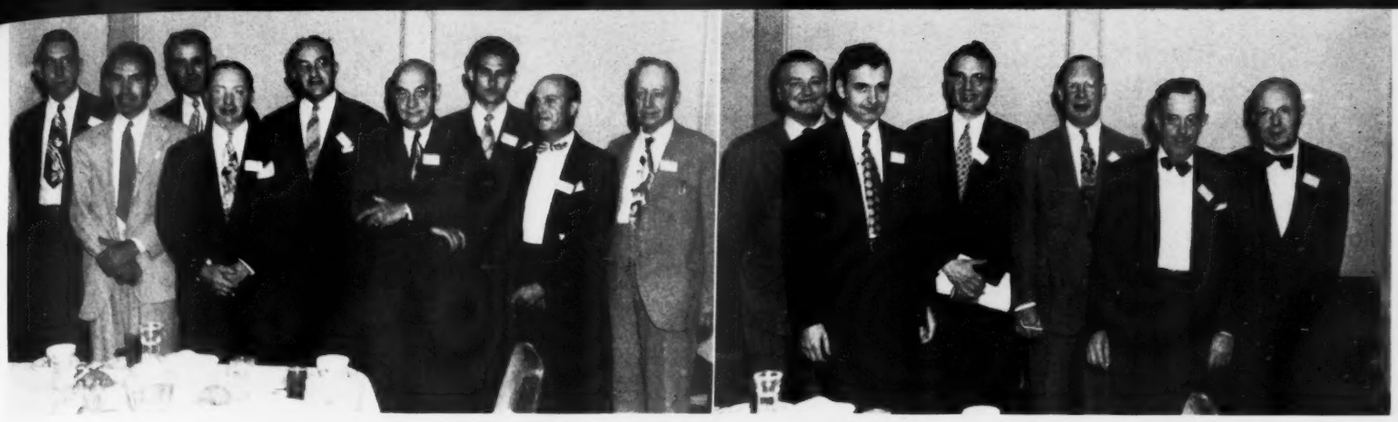
The senior press official supervises the Pressroom Production Board a visual board for the pressroom. One of a duplicate set of slips goes to the board while the other is the route slip. It contains such information as the date the job is promised for; the press upon which the job is to be run; the stock of the job, etc.

A requisition slip for the stock goes to the stock department with the request for the stock at a specific time and place.

The visual board for the pressroom contains the number of the presses or their identifying symbol across the top while down its side runs the day of the month. Each daily period is divided into five actions; the first two represent 8 hour day shift; the second two the eight hour night shift; while the last and fifth represents the overtime section. Templates are cut to fit these divisions and a template is cut to fit the length of run on a particular job. This is easily done with the knowledge that makeready time usually fits a four hour section and that the run on a specific press is averaged at so many thousand per hour. A glance at the board will then establish the length of time any of the equipment is tied up and what may be expected of it for any job.

These templates may be printed on different colored papers; blue perhaps could be used for the run; yellow when the press is down; and blue when the press is open. This arrangement played an important part in the moving operations when recently the entire plant was moved to its new location, 40 presses being moved almost intact.

Red pins inserted in any particular spot will call attention to a deadline



ANPA Mechanical Committee Gathers for Luncheon — At the Pittsburgh ANPA Mechanical conference (Hotel William Penn, July 19, 20 and 21) committee members gathered each for lunch (dutch treat). A few members were not present when this photo was taken. In this picture (from left to right) they are: C. M. Flint, Research Director; William Baumrucker jr., Assistant to the Business Manager, New York *Daily News;* Wm. B. Pape, Assistant Publisher, Waterbury (Conn.) *Republican* and *American;* Maurice A. Hagan, Photo-engraving Supt., Philadelphia *Inquirer;* T. A. Corcoran, Purchasing Agent, Louisville (Ky.) *Courier-Journal* and *Times;* J. L. Stackhouse, President, Easton (Pa.) *Express* who recently resigned as Chairman of the Committee; V. A. Spitaleri, Assistant to Manager Walter E. Wines, ANPA Mechanical Dept.; Russell S. Stratton, Asst. Gen. Mgr., St. Petersburg (Fla.) *Times;* Walter E. Wines, ANPA Mechanical Dept. Manager; Edwin H. Evers, Production Manager, St. Louis *Globe-Democrat* (just recently appointed Chairman of the ANPA Mechanical Committee); Ralph R. Cranmer, Business Mgr., Williamsport (Pa.) *Grit;* Fred W. Schaub, Business Mgr., Decatur (Ill.) *Herald* and *Review;* Capt. Charles H. Ruth, Production Manager, Washington, (D. C.) *Star;* Arthur H. Burns, Mechanical Supt., New York *Herald Tribune;* Rudolph E. Lent, Business Mgr., Jersey City (N. J.) *Jersey Journal.*

Not present at the time this picture was taken were: John L. Blake, Scripps-Howard Newspapers, New York; W. L. Fanning, General Mgr., Yonkers (N. Y.) *Herald-Statesman;* Bernard F. Garrity, Production Mgr., Gannett Newspapers, Rochester, N. Y.; John J. (Ted) Shea, General Production Director, Hearst Newspapers, N. Y.; John W. Park, Production Mgr., Chicago *Tribune.*

that is becoming alarmingly close or some such admonition. When a job is complete the template can be removed from the board. Such a board may also reveal where time is lost as often happens when stock fails to arrive at a press in the required time.

Staff Inspector

Two types of inspection are used at the plant. First there is the Production Progress inspection and then there is the Quality Inspection.

The first is carried out by the clerk who makes his daily trip through the plant while the Quality Inspection is carried out by the press foreman. Another top-flight craftsman inspects the work with an eye to being critical of the quality, color and work and also aiding the help in keeping the quality up what may be expected of a specific job.

In addition a sheet of each run is seen every four hours by the Production Superintendent's Office or if the job runs off before that time, sooner. Check is thus made on quality as well as quantity. But in addition, there is also an incentive plan for the success of any plan lays in the hands of the pressman.

This is a group incentive plan which rewards the individual, basing that regard on the rate of the mechanics pay bears to the increased revenue obtained by the concern. This has amounted to a months pay per annum per employee in instances.

A weekly plant managers meeting is held attended by the Production Control Manager and the Plant Superintendent for the purpose of stopping leaks and facilitating the proper operation of the plan. And while the talk has revolved about the operation in the pressroom, the same system is used in each step of the printing operation at MacLean-Hunter.

Ink Flow Measurement

The third speaker at the clinic concerning pressroom operation was G. Stuart Braznell, Braznell Corporation, St. Louis, who described *Photoelectric Measurement of Ink Flow from Press Fountain.*

The photoelectric method of measurement of ink flow, to the writer's mind, is the first attempt at scientific measurement of putting ink to paper in the printing plant. A good deal of credit should be given to the people responsible for this innovation.

Braznell points out that many factors control the flow of ink when put to paper. There is the paper itself; the speed of the press; the eyes of the human that controls that flow manually; the humidity or lack of it, and the ink, of course. Color blindness of the individual and the kind of light under which the sheet is examined is naturally one of the stumbling blocks or combination of them that does so much to hinder any printing process.

Braznell demonstrated the sensitiveness of the Photovolt cell when viewing the printed sheet and explained how his concern during the early stages of their use of the cell pulled press proofs of every batch of ink and then used the cell to insure the perfect likeness of each batch. Yet despite these precautions, complaints persisted about the failure of ink matching in some of the houses. This led to the use of the cell in examination of the printed sheet and the amazing discovery that much of the trouble emanated from unequal ink distribution across the rollers.

This led to the examination of the press sheet with the cell and a subsequent marking of the sheet with the values recorded by the cell. The use of filters made this possible with inks other than black, the three filters being developed to date being, green, red and purple. A yellow filter has not been developed to date. It was explained that any filter might be used for any color as long as some standard can be set, say 28. This will permit reading up or down from it, the lower reading usually denoting a stronger flow of ink while the higher reading indicates a weaker ink flow. Readings run from 0 to 100, black registering 0.

It might be pointed out at this time that the cell shows fatigue characteristics which compels standardizing against white occasionally. Then too, current fluctuations have some effect on the readings procured or obtained with the cell, very often a comptometer on the same line affecting it seriously. The device used by Braznell was the No. 610 machine of the Photovolt Corporation of New York, N. Y.

Braznell is of the opinion that the cell offers the only scientific method of setting an ink fountain, for a reading obtained across the press sheet effectively points out where changes must be made in the fountain setting.

The cell also permits pressmen in widely separated sections of the country to run a color exactly alike. Readings obtained can be checled anywhere and corrections made to conform with the readings. It is also noted that the source of the ink has no bearing on the reading, various tests made with many proprietary products establishing this to be true.

J. Tom Morgan, jr., who lectured earlier, bore witness to the worth of the cell, it being his contention that his firm's LithoKhrome process relied greatly upon readings taken by the cell's aid. Yellows, for illustration, said Morgan, were judged more accurately than ever before by the use of the cell, for any four color process is depenent to great measure upon the faithfulness of rendition of each color put to the paper.

With such a cell, there is no longer any great difference in the running of color either day or night for readings do not depend upon light sources other than those in the machine. Another use of the machine was found in the establishment of the characteristics of an ink as well as in the ink of the finished job. It must be noted however, cautioned Braznell, that certain limitations still exist. Readings obtained on such a color as a reflex blue may give a reading only

At the Bindery Clinic held on Tuesday Morning, August 10, Intl. President A. Gordon Ruiter (right) presided. At his left is shown Otto Pelz, President of Cleveland's A. H. Pelz Co., who discussed mechanical bindings. Another speaker, Ben Zevin of the World Pub. Co., Cleveland, was not available at the time of taking this picture. Mr. Zevin spoke on New Developments in Bindery Operations.

in red reflection of that blue and not in the other components, in this manner not providing a reliable reading on the blue of that ink for illustration. But even with this shortcoming, use of the cell can definitely be said to be one of the forward steps in the Graphic Arts.

Bindery Clinic

Problems of Edition Binding

DECIDED improvements in operating edition binderies were indicated during the address of Ben D. Zevin, President, World Publishing Co., Cleveland, given at the Bindery Clinic Tuesday forenoon. He did not profess to come to the conference as a technical man but as a merchandiser of books, and a student of production methods to help him in the sale of books on a large scale. At one point he said that hitherto "the greatest deterrent to low-cost, high-speed binding has always been the use of animal glue adhesives," because such adhesives required from 24 to 48 hrs.—depending upon the weather—to dry between operations, in consequence of which large areas of floor space and a lot of equipment was required.

He announced, informally, that because of research work done by the Battelle Memorial Institute for the Book Manufacturers' Institute, of which his firm is a member, a thermoplastic adhesive has been developed which will dry in about 4 sec. He indicated that the results will be revolutionary in production methods employed in edition binderies, "permitting continuous production and saving book manufacturers acres of floor space now used to permit glues to dry."

Reverting to merchandizing methods and effect of production processes upon the sale of books. Mr. Zevin told of another development.

"We, in the publishing business," he said, "are guilty of hiding at least one of our sins. The binding material with which we cover our books is, for the most part, drab and unexciting. Through the war years and in fact to this very day, paper has replaced the use of cloth in the binding of popular-priced books. The high cost of cloth has made it necessary for some publishers to use paper material on $3 books.

"These drab materials are in turn covered with gay, colorful and attractive jackets with which to attract the customer's eye. This is a particularly important step in the field of low-priced books where so many sales are impulse sales. Jackets are but a crutch at best. They readily succumb to handling and soon

Speakers' Parade at ANPA Mechanical Conference, Hotel William Penn, Pittsburgh, July 19, 20 and 21. Here are 15 of them—there were 34 of 'em during three-day session.

1—G.M. Corp's Truck Div. Boss gave sound advice about selecting most efficient truck for delivering newspapers around and about the city.

2—Contemplative moment during address of Charles H. Ruth jr., who discussed the Washington (D.C.) *Star's* system for handling the *Advertising Copy Problem*. His address was one of the highlights of conference.

3—One of the big-newspaper executives (New York *Times's* Ben Dalgin) as usual speaks sincerely and straight from the shoulder when reporting on ANPA-AAAA Joint Committee on Newspaper Printing.

4—Some of the boys thought he was too gloomy. Anyhow, T. F. Mowle, *Wall Street Journal* Comptroller, reported immediate future of newspaper economics as a statistician sees them. Predicts 10c newspapers.

5—A. E. Katz, associated with Toronto (Ont.) *Star*, discussed the new Wallastar automatic newspaper bundling machine which wraps wire about bundle and electrically welds the joint.

6—Charles R. McGuire, Asst. Mechanical Supt., Minneapolis, (Minn.) *Star* and *Tribune* described in detail operation of his plant's mailing room. It's big-city method.

7—Gesticulating free-handedly over the lectern, Harry Carver, Mailroom Supt., Minneapolis (Minn.) *Star* and *Tribune*, answers questions generously after his associate (McGuire at right) had finished his talk.

8—Nonplused is Leslie J. Griner, Production Manager of the Detroit *News*. He was presiding at a stereotype session at the time. Someone asked from the floor: "Why the high shrinkage mat?" A titter ran through the audience. A prominent executive came to his rescue with an answer from the floor: "It is the result of the desire to print more revenue pages without an increase in newsprint consumption." The meeting proceeded calmly.

9—Took the boys into his confidence, did C. P. McArthur, owner of The Dick Mailer. Described obsolescent conditions of plant when he bought it—asked all interested executives' help in improving his mailer.

10—Earl Weiskittel supervises, successfully, pressroom for the Youngstown (O.) *Vindicator*. He described basic procedures for pressroom management. First principle is "a good foreman should endeavor to get the man to *want* to do what the foreman wants done."

11—Pleasant-spoken John G. Strange of the Institute of Paper Chemistry, Appleton, Wis., explained that research isn't mystical nor mysterious . . . it's nothing more than organized method of investigation . . . big expectations of quick results cannot be realized."

12—"The foreman is the key to all human relations," was recognition given to plant and departmental executives by Robert H. Spahn, of Oklahoma City (Okla.) Pub. Co. His thinking coincided with that of his audience. Without actually saying so, Spahn indicated management sometimes is lax with respect to recognizing the vital linkage of the foreman between management and employee. Spahn's sincere delivery and reasonable thinking easily made his address one of the conference highlights.

13—Champion of the foreman is A. C. Croft (left), President of the National Foreman's Institute, Deep River, Conn. His address, largely, established the fact that foreman ought to be made part of the management-employee team. Foreman's estate has been elevated because it's now necessary for him to impart economic knowledge and interpret economic trends . . . . He must also have a good knowledge of people in order to administer his supervisory job—all with management's recognition of him as an important link.

Human relations wizard, Dr. Ralph L. Lee (right) of General Motors Corp., gave a restrained interpretation of his famous analysis of the different kinds of people to be found in any organization. After giving a rollicking description of the different characters to be found in any organization, he said: "Don't kid yourselves that some day you'll get a better group than you now have. "You won't do it. . . . You'll just have to learn how to handle them."

14—J. W. Barrs of Signode Steel Strapping Co., explained conditions under which his company's wire-tying machine is made available. Said machines ordered now might be expected for delivery during third quarter of 1949.

15—C. M. Flint, ANPA's Research Director, gave two important addresses during conference. "Research takes time and money, but if continued along proper lines, will pay a return for every dollar invested in it. . . . . The thousand and one variables that give newspapers their daily headaches must be studied and solved before we can hope to get down to improved processes. . . . I know of no unemployment that has resulted from the fruits of research." His other address was devoted principally to a description of the cold type method of typesetting and photo-engraving newspaper page plates at present being used by Chicago newspapers.

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Informal Shots Taken at Pittsburgh ANPA Mechanical Conference, Hotel William Penn, July 19, 20, 21.

1—Howard J. Lamade, jr., Williamsport (Pa.) *Grit;* William H. Porter, New Haven (Conn.) *Register;* Nicholas M. Fellman, Mechanical Supt., Chester (Pa.) *Times.*

2—Dr. R. R. Voorhees at work reporting proceedings of Pittsburgh ANPA Mechanical Conference for *Printing Equipment Engineer,* (August Issue).

3—P. J. Canova, Mechanical Supt., Charleston (W.Va.) *Daily Mail;* Fred Meyer, Mechanical Dept., Detroit *News;* Auburn Taylor, Pressroom Supt., Charleston (W.Va.) *Gazette;* L. J. Griner, Production Manager, Detroit *News;* George Fuller, Stereotype Supt., Cleveland *Press;* Edgar Mills, President, Eastern Newspaper Supply, Inc.

4—Richard W. Gardner, Eastman Kodak Co.; Jack Kelt, Mallinckrodt Chemical Co.; Granville Hutchinson, Mechanical Supt., Troy (N.Y.) *Record;* William H. Street, United American Metals Corp'n.

5—(Left to right): George Hall, Maintenance Dept., Cleveland *Plain Dealer;* Deo A. Padgett, Composing Room Supt., Cleveland *Plain Dealer;* L. J. Griner, Production Mgr., Detroit *News;* Frank E. Marengo, Mechanical Supt., Port Huron (Mich.) *Times-Herald;* George Fuller, Stereotype Supt., Cleveland *Press;* Charles Kirk, Stereotype Supt., Detroit News and President of Great Lakes Newspaper Mechanical Conference; LeRoy Coates, Pressroom Supt., Grand Rapids (Mich.) *Press;* Claude H. Taylor, Mailroom Supt., Detroit *News;* W. R. Coddington, Composing Room Supt., Youngstown (O.) *Vindicator;* W. F. Alexander, Photo-Engraving Supt., Cleveland *Press;* Earl Weiskittel, Pressroom Supt., Youngstown (O.) *Vindicator;* Sidney Weiskittel, Pressroom Supt., Cincinnati *Enquirer.*

6—Nicholas M. Fellman, Mechanical Supt., Chester (Pa.) *Times;* Clarence Snethen, Mechanical Supt., Waukegan (Ill.) *News-Sun;* J. L. Stackhouse, President, Easton (Pa.) *Express,* and until recently Chairman of the ANPA Mechanical Committee.

7—Louisville (Ky.) *Courier-Journal* and *Times* Group—T. A. Corcoran, Purchasing Agent; Lisle Baker jr., Business Manager; M. George Martin, Production Manager; C. Frank Mann Composing Room Supt.; C. L. Bronger, Photo-Engraving Supt.

8—Wm. A. Penny jr., Imperial Type Metal Co.; Allentown (Pa.) *Call-Chronicle's* Miller; Charles D. Adkins, Sales Manager, J. M. Huber, Inc.; William E. Rutenberg, Chicago Manager, J. M. Huber, Inc.

9—Reginald Reed, Pressroom Supt., *Christian Science Monitor,* Boston; Roscoe C. Palmer, Stereotype Supt., Binghamton (N.Y.) *Press;* E. C. Morrison, Pressroom Supt., Jacksonville (Fla.) *Times-Union;* John W. Strange, Olean (N.Y.) *Times-Herald.*

10—Printer Family—(Left to right): H. G. Taylor, Production Manager, Bethlehem (Pa.) *Globe-Times;* J. B. Taylor, Mechanical Supt., Sao Paulo (Brazil) *Folha Da Manha* (Sheet of the Morning); E. H. Taylor, Burlington (N.C.) *Times-News;* A. R. Taylor, Pressman, Herald-Sun Papers, Durham, N. C.

11—Amos Hoffman, Intertype Corporation; I. Tornberg, Vice President, Wood Newspaper Machinery Corp.; W. G. Terrill, Composing Machinist, Miami (Fla.) *Daily News;* Claude H. Andress, Stereotype Supt., Pontiac (Mich.) *Press.*

12—H. E. Brundage, Cline Electric Mfg. Co., and Ben Offen of B. Offen & Co.

13—Arne Berglund, Vice President, the Fylgia Printing Co., Stockholm, Sweden; Bernard J. Taymans, Asst. General Manager, Printing Industry of America, Washington, D. C.

become torn and soiled. As a veteran of more than 40 years in the field of low-priced books, we were determined to do something about the jacket problem.

"Just announced to the book trade is our new line of Falcon Books for boys and girls, which, to put it modestly, is creating a slight sensation, chiefly because of the binding. Falcon Books are are hard-bound, but instead of using the traditional cloth covering materials, we are using an especially durable coated Kraft printed in four colors. We then laminate the paper with an acetate sheet and apply this strengthened cover material (Kraft paper and acetate) to boards, with the result that we have a book here which has both strength and beauty and will not assume a premature shopworn appearance in the store because of a mutilated jacket. The laminating process, plus a trick or two we picked up along the way, has lent wholly unsuspected strength to the finished product."

During the discussional period following his talk, Mr. Zevin answered numerous questions about technical operations.

Jean Batiste — That Crazee Printer Feller, perhaps the highlight of the annual banquet on Wednesday night during Cleveland Craftsmen's convention. Character was portrayed again this year by Neil Powter, Sales Promotion Manager, Howard Smith Paper Mills, Ltd., Montreal, Can. Powter utilized free verse with gentle ribbing of many in attendance at convention, all composed after his arrival in Cleveland.

Mechanical Bindings

Specimens of 16 mechanical bindings were shown to the audience at the Bindery Clinic by Otto K. Pelz, President, A. H. Pelz Co., Cleveland. He referred to the history of the development of such bindings. As he showed to the audience a specimen of each kind of binding, he described its characteristics and values. Then he enumerated qualities which he considered would make a "perfect binding," following which he remarked that "none of the present bindings have all of these qualifications, so each binding must be selected according to each particular need."

Photomechanical Clinic

Cut Photo-Engraving Costs

IN the Photomechanical Clinic Tuesday forenoon, presided over by Gradie Oakes, the letterpress side of the discussion was presented by Clarence Rohrich, President and General Manager, Akron (O.) Engraving Co. The offset-lithographic method of color separation was presented by William C. Stone, Production Manager, Copifyer Lithograph Corp., Cleveland.

Mr. Rohrich said that 90 per cent of all printing is done by the letterpress process and that jointly, letterpress printing with its use of photo-engraving for pictorial reproductions, "represents the best medium of visual expression." He recognized offset and gravure pictorial reproductions as competitive but indi-

cated that continuing research work being done to improve manufacturing proceedures would tend to keep the photo-engraving process ahead of competitive processes.

Cutting down costs can be effected by supplying the finished copy so that the finished plate may be produced with a minimum of operations. The opinion was expressed that offset competition was being felt and to that end short cuts had to be introduced. It was felt that the photo-engraver could supply a line plate of which he had a complete negative much more reasonably.

Short cuts and greater plant efficiency could make possible better competition. In the case of that line plate it might be possible to make a deep-etch zinc plate at a lower cost than an electro if two negatives were made at first and then only a double exposure made for the plate.

However, Rohrich expressed doubt if the competition of the offset method on a 17 in. by 22 in. press with combination 4 up 8½ in. by 11 in. forms could be met in letterpress at this time. In view of this it was suggested that each job be routed so that advantage may be taken of the natural values of each process, and that the job be shopped out to its field if that process was not available in the plant.

In connection with this it was noted that more typo shops were invading the offset field and becoming combination shops.

During the question period attention was called to an examination of the dot structure in certain electrotype plates. The examination showed a dot which had a halo around it. This "hollow" spot with its ring was revealed very strongly under high magnification. The difficulty of an exact answer was evident, yet some answerer cited his finding an identical situation in cases where Vinylite molds were used, rather than the lead or Tenaplate. The Vinylite molded plates are said to show the aforementioned characteristic. However, some cases of the kind have turned up in lead molding where the lead was used with a poor nickle solution and the deposit of copper was imperfect.

With the knowledge of the several cut mounting cements available that fastened the metal to the wooden base came also the more intimate suggestions of several of the Craftsmen. It was noted for illustration that double coated Scotch tape works quite well with flush cut cuts up to 5 in. by 7 in. size. Another said to be sure-fire method was that of rubber cementing both the wood surface and the metal. However, only copper or zinc works well in this case, electros not giving the excellent results found with the first

(Continued ou Page 48)

EQUIPMENT & SUPPLIES

Auto-Ejector Set Bulletin

IN a 4 page bulletin, Mergenthaler Linotype Co., illustrates and describes its new Auto-Ejector Set for application to any 30 pica Linotype. Models may be obtained for either four- or six-mold disks. The Auto-Ejector Set operates with a simple indexing gear actuated by the mold disk pinion. As the operator brings the desired mold into normal position, the ejector blade is automatically set. When a new mold or liners are added to the mold disk, the operator moves the Auto-Ejector stud to a new setting which corresponds to the slug length. From this point on, the proper ejector setting is automatically made whenever the operator brings a particular mold into operation. A copy of the bulletin will be sent to you by Mergenthaler Linotype Co., or *Printing Equipment Engineer* will gladly pass along your request.

Hydrill Paper Drill

TURNER Printing Machinery, Inc., announces the Super Speed line—the Hydrill. The Hydrill is an automatic, hydraulically powered paper drill. It is supplied with a single unit control system. One motor and switch activate the hydraulic system, the drill head, and the table lighting. Under actual tests over the past nine months, reports sponsor, it consistently drilled a 2 in. lift of coated stock with a ½ in. drill.

Features include an optional automatic gravity side guide, stop-blocks, a chip container which is an integral part of the drill cabinet, a foot treadle which enables the operator to retain control of the movement of the drill at all times, concealed flood-lighting of the working area, and a drill sharpener which will be offered as standard equipment during an introductory period.

Available accessories include a round-cornering attachment, slitting attachment, slotting attachment and drill sharpener.

The hydraulic unit itself is announced as being leak-proof. All fittings, valves, and the pump are positioned inside the oil reservoir.

Specifications are as follows. Table size, 24 in. by 32 in. Overall floor space, 31 in. by 40 in. Overall height, 56 in. Height from floor to top of table, 37 in. Accommodates drills with diameters from ⅛ in. to ½ in. Maximum distance from back gauge to center of hole, 4¾ in. Maximum distance from drill to side guide, 18 in. Size of motor, ⅓ h.p.

Further details are available from Turner Printing Machinery, Inc., or *Printing Equipment Engineer* will gladly pass along your request.

View of Hydrill paper drill recently announced by Turner Printing Machinery, Inc. Takes drills from ⅛ in. to ½ in. diam. Maximum lift is 1¾ in. Drill sharpener available with equipment.

Contact Bold Condensed

"CONTACT," a new bold, condensed printing type for general display composition and particularly for newspaper headlines, has been announced by American Type Founders. "Contact" is available in Roman letters in 8, 10, 12, 14, 18, 24, 30, 42, 48, 60, 72

CONTACT
Bold Condensed
and
Bold Condensed Italic

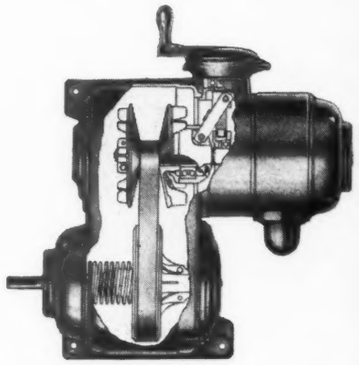
and 84 pt. sizes, and in italics in all of the foregoing sizes through 72 pt. The italics from 24 pt. are on an angle body. Fancy Ns and As will be fonted separately in italics.

"Contact" is the work of Frank Riley, who also created the popular "Grayda" type for ATF. Mr. Riley is an advertising artist. Born in Missouri, he received his early training at the Chicago Art Institute while working part time in an engraving plant. He came under the influence of Oswald Cooper and Frederic W. Goudy, who stimulated his interest in the printing art. Then he studied in Paris. Returning to the U. S. he gained a reputation in New York for smart layouts, art work, and lettering.

Specimen sheets and other details about "Contact" can be had from the American Type Founders.

Colorful Variable Speed Motor Bulletin

PRESENTATION of new model U. S. Varidrive motors is made in a colorful bulletin issued by U. S. Electrical Motors, Inc. The Varidrive, which enables a machine operator to obtain infinite speeds, is shown in natural colors in different capacities. Applications are for envelope and embossing



machines, film developers, Monotype casters, printing presses, slitters, slotters, stitchers, staplers and web presses. This 16 page bulletin is attractively compiled and shows in dramatic form how a variable speed motor can be applied to countless operations, to reduce operator fatigue and appreciably increase production. Interesting graphs and illustrations show ways in which variable speed can be used with savings in man hours and in obtaining better production. A diaphanous view of the Varidrive shows the operating principle of the motor. Supplementary drawings in full color detail major improvements in design. A copy of this attractive four-color bulletin may be obtained by writing to U. S. Electrical Motors, Inc., direct or in care of *Printing Equipment Engineer*.

Hydrion Water Demineralizer

FOR photographic, offset-lith and other platemaking work, A. E. Tomkin & Co., has announced the Hydrion Water Demineralizer. The device is mounted above or near to and is attached to water supply faucet by flexible hose. The purified water flows from a hose connection near the top of the casing.

Sponsor states the Hydrion Cartridge Demineralizer produces mineral-free water by the passage of water through a column of ion-exchange resins. The water converted is equivalent in chemical purity to distilled water. An electronic indicator shows the quality of the water at all times. Also, according to A. E. Tomkin Co., the water produced

is equivalent to double-distilled water with an appreciable percentage at the start of flow from a new cartridge equivalent to triple distilled water. The end-point is calibrated at 10 parts per million of mineral content which is claimed to be

Hydrion Water Demineralizer purifies line-supply water. Attaches by hose connection to water faucet. For use by all printing plants where distilled-quality water, such as is used in plate-making, is required.

equivalent to single distilled water. Regarding chlorine content of water, both chlorine in the form of chlorides and chlorine in water treated with chlorine gas or the hypochlorites will be removed to a trace.

The Hydrion cartridge is the primary element of the unit. Cartridges are charged with two synthetic ion-exchange resins. A cation resin removes the metallic ions such as calcium, magnesium, iron, sodium, and replaces them with hydrogen ions converting the mineral salts into acids. The other resin called the anion removes the acids.

Each cartridge has capacity to remove more than 1100 grains of dissolved minerals with the number of gallons of pure water delivered varying with the dissolved mineral content of the water of the locality. Examples: About 440 gal. of New York (N.Y.) water will be purified before the 1100 gr. cartridge is exhausted; Cleveland water, 110 gal.

The cartridge holder is made of cast aluminum. The frame is provided with two keyhole openings for wall mounting.

Further information may be secured by addressing your request to A. E. Tomkin Co., in care of *Printing Equipment Engineer*.

Pacific-Western Four-Part Carbon Ready Press

ORVILLE DUTRO & SON announce the Pacific-Western Four-Part Carbon Ready Press. This specialty press is designed to print carbon snapout forms. It will print from the roll on both sides of the web, numbers and strikes-in in color, perforates, registers and pastes. The press will print up to four copies with the operations just enumerated in a single operation at speeds from 7000 to 12,000 per hr.

The press is the outcome of a lifetime of experience of Clarence L. Johnston who has been associated with some of the largest plants in the country. The engineering on the press was done by Orville Dutro & Son, press designers. The press is built by Western Gear Works.

One of the features of the press is the web automatic tension device and side guide for eliminating trim.

Sponsor explains that if the trim amounts to ¼ in. on a web 11 in. wide (almost 2½ percent on the paper bill) and multiplying it over a period of time, the amount will be considerable.

Mr. Dutro also explained that where line hole punches are run for the purpose of collating and it becomes necessary to clip off and waste from ½ in. to ⅝ in. of paper on all webs, there is approx. five percent on an 11 in. web to charge against the paper bill. A four-part press saves this amount, and delivers the work completed and ready to be cut from 17 in. lengths to 8½ in. by 11 in., or whatever the size may be, and packed for shipment.

The Pacific-Western Press operates on the single plate principle. It is a T-shaped press so that the printed webs come in from one end and the carbon paper comes in from the side. Floor space —Length including cross section of right-angle part, 22 ft. 8½ in. Width of press proper, 4 ft., ¼ in. Transverse section of press, 12 ft. 7¼ in. Height, 9 ft. 4⅜ in.

Further information may be obtained by writing Orville Dutro & Son direct or *Printing Equipment Engineer* will gladly pass along your request.

Spartan Book with Heavy

SPARTAN Book with Heavy is a new type face which has just been cut and is now available by the Linotype Company.

Sizes now ready include 6, 8, 9, 10, 11, 12, 14, 18 and 24-point. Examples are shown below:

6 Point

ABCDEFGH abcdefghijklmnopqrstuvwxyz 1234567

ABCDEFGH abcdefghijklmnopqrstuvwxyz 1234567

12 Point

ABCD abcdefghijklmnopqr 123

ABCD abcdefghijklmnopqr 123

24 Point

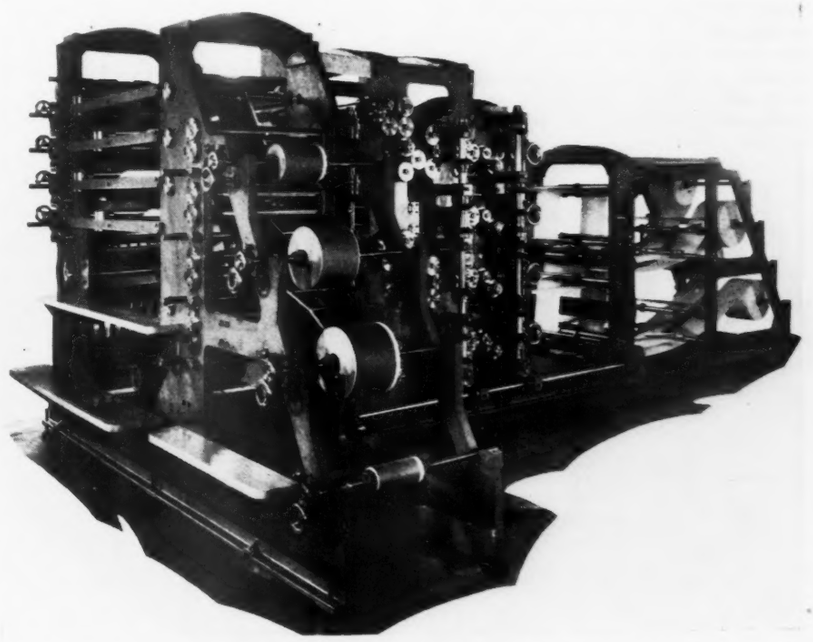
ABC abcdefg 123

ABC abcdefg 123

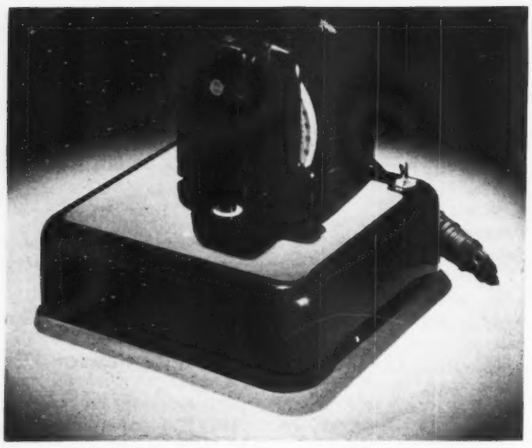
Kodak Color Densitometer

A COLOR densitometer which does not require a "warm up" period, and which operates without glare so that it is easy to locate the desired section of the negative to be sampled, has been announced by the Eastman Kodak Co. The Kodak Color Densitometer, Model 1, it is claimed, will enable the worker to make either black-and-white or color prints on a truly scientific basis by providing an exact check on exposure, contrast, required contrast grade of paper, and negative densities.

The instrument is a visual, direct-reading instrument with which densities from 0.0 to 3.0 can be read directly from the scale. When a supplementary neutral density filter is employed, densities up to 4.0 can be read. A feature of the instru-



This Pacific-Western Four-Part Carbon Ready Press is T-shaped. It is designed to print carbon snapout forms. Will print from the roll on both sides of the web. (Max. width, 15 in.) Performs a number of operations. Will print up to four copies at speeds ranging from 7000 to 12,000 copies per hr. Motor, 10 h.p.



By means of the Kodak Color Densitometer, Eastman Kodak Co. states black-and-white or color prints can be made on a truly scientific basis by providing exact check on exposure, contrast, required contrast grade of paper and negative densities.

ment is that the divisions of scale are uniformly spaced throughout the entire range. This makes the scale easy to read.

The Kodak Color Densitometer, Model 1, employs an "optical wedge" against which desired densities are measured. The optical wedge is made of a special plastic in which are suspended minute graphite particles. Circular in shape, the wedge has a linear thickness variation around its edge to give a linear change in density. Therefore, a beam from a constant light source directed through the outer edge of the wedge is affected in its intensity by the location of the spot on the wedge through which the light is beamed.

Comparison is obtained in the densitometer by the use of two independent light sources—two General Electric Miniature Bayonet-Type Lamps having a rating of 0.60 amps. and 5.8 v. The light from one of the lamps passes through the sample while the light from the other lamp passes through the wedge. The wedge is rotated in either direction until the intensity of the light as seen through the eye-piece is equal for both the negative and the wedge. The proper reading is then taken from the circular scale attached to the wedge which is graduated from 0.0 to 3.0 in graduations of 0.05. For higher readings with the neutral density filter, the density of the filter is added to the density read from the scale.

Since precision in reading from a very small section of negative is frequently of great importance, the Kodak Color Densitometer, Model 1, has been designed so that it will measure from an area no greater than 1.25 mm. diam. The scanning head is so located that an area can be read in the center of an 8 in. by 10 in. color transparency or negative. When the scanning head is lifted the intensity of the two lamps is automatically reduced to eliminate glare and to aid in locating the desired area while a transparency or negative is inserted for reading. When the scanning assembly is lowered it closes a switch which brings both lamps to full brilliance for easy reading.

The unit includes a pressed metal filter holder fitted with three Kodak Wratten Filters. The filter holder slides in the viewing tube of the head and the filters are positioned by click stops. The color filters were included to make it easy to read the densities in a color transparency when no gray scale was included in the subject area. The three filters, which are sufficient for most color work, are the red Kodak Wratten No. 70, the green No. 74, and the blue No. 39A. Other filters for special applications may be substituted for those furnished.

A blank space is provided on the filter holder for use with black-and-white work.

The Kodak Color Densitometer, Model 1, is designed to operate only on 110-125 volt, 50-60 cycle AC current. It will be priced at $50.00.

Press Blanket, D.P. Blanket and "Blue" Roller

GOODYEAR Tire & Rubber Co. has added a cork blanket to its line of newspaper press blankets, according to E. R. Coate, manager of the company's printers' supplies department. Coate said the cork blanket is of uniform gauge, impregnated with a special, oil-resisting compound designed to eliminate swelling due to oils. Another improvement, he said, is the use of a low-stretch fabric so that the blanket will not "walk" on the press.

Another new Goodyear product is a stereotype mat blanket. It is designed primarily for molding direct pressure newspaper mats. Composition is rubber and fabric, produced in the standard 26 in. by 30 in. size, ⅛ in. thick.

Goodyear is now in production on its "blue" newspaper printers roller. Ernest Peterson, manager of the company's industrial rolls department, said the roller does not swell, retains its original hardness, and gives long service before and between regrinding. Its composition incorporates new materials made available since the war, Peterson said.

Improved Color Separation Cameras at Tribune

ACCORDING to the Chicago *Tribune*, improved photographic separation of the basic colors in paintings, color photos and other copy scheduled for full color rotogravure reproduction in the Chicago *Tribune* became apparent recently. This is the result of installation of two new precision cameras in a new air-conditioned camera room at the *Tribune* roto printing plant.

Both extreme enlargements and extreme reductions are facilitated by a turret lens board on each of the two cameras. The possibility of damaging copy is reduced by glass copy boards. These copy boards can be used for copying positives with reflected light and for photographing transparencies with direct light.

Accuracy in the timing of color separation exposures is made possible by a Luxometer attachment on each camera which automatically adjusts exposures to allow for fluctuations in the electric current. As a result, all exposures of any copy are uniform in terms of light units.

Cameramen can now reduce layout and retouching problems by composing the two or more pictures in any single layout on a single plate. In the case of a layout made up of five color pictures, for example, retouchers previously had to work with 20 plates.

By photo-composing with the cameras, cameramen can provide the basic color separations of an entire layout on four plates. At the same time, new masking techniques provide a more exact rendition of the original color copy than was possible before.

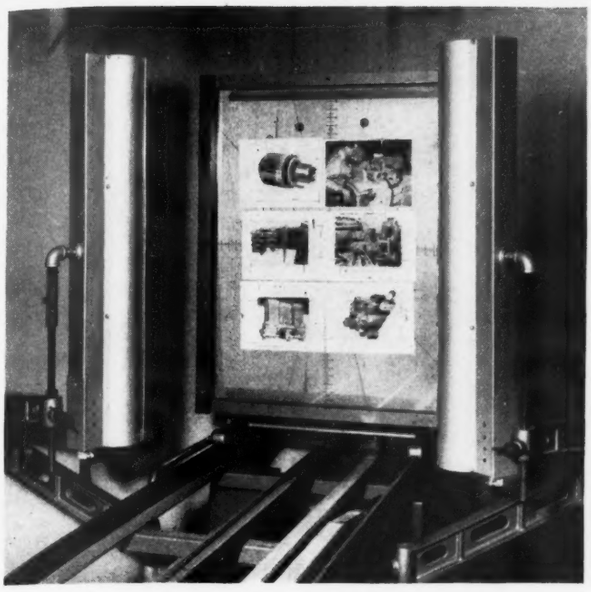
While glass plates are utilized in the bulk of the color separation work, each of the new cameras is equipped with a vacuum back which holds film negatives firmly in place in the camera when film is used.

Operated in conjunction with each of the new cameras is an air conditioned darkroom equipped with temperature-controlled sinks which keep all photo processing solutions at uniform temperatures at all times. Other improvements in the darkroom equipment include the addition of photo-volt densitometers which measure the precise relative densities of color negatives, an operation formerly dependent upon the judgement of the cameramen and therefore subject to human error.

Dual control systems by which lens aperatures, focusing mechanisms, and the operation of the Luxometer units can be operated from inside as well as outside of the darkrooms add to the efficiency of the entire photo operation. Darkroom interior lights are operated by the cameramen from the control board of the camera itself.

Identification Tags for Fixture Manufacturers

BALLAST identification tags now are being offered to fluorescent lighting equipment manufacturers by General Electric's Specialty Transformer and Ballast Divisions. The tags are designed to tell the customer at a glance that the ballast built into his fixture is a G-E product. Colored yellow and blue, the tags are of the fold-over type. They measure 2½ by 3 in. The inside pages of the new tags carry a short, non-technical story about ballasts and their function.



View of camera copyboard illuminated with Even-Lite Lamps. Reflectors fitted for special incandescent lamps which furnish constant light source.

Even-Lite Incandescent Lamps for Camera Copyboard

THE Even-Lite Camera Copyboard Lamp has been developed for use by the photo-engraving, the offset-lithographic and the rotogravure platemaker. These lamps can be used on any type of camera such as the Consolidated, ATF, Chemco and others. It is claimed that crisp, clean negatives, retaining all the tone gradations of the original copy are routine with these lamps when used with strip film, dry plates or panchromatic and other films.

The Even-Lite lamp consists of floor standard base (or it may be adapted to the camera fixed holding brackets) a reflector fitted with proper bases for reception of the bulbs, ready for connection to the power line.

The incandescent lamp uses 1500 w. and has an inside-frosted bulb, bi-post base, and means for minimizing the blackening of the bulb. It is said its high efficiency and great light output in the blue-violet part of the spectrum make for fast, accurate color separations. The special lamps operate at a color temperature very close to 3200 deg. Kelvin which is the value for which Eastman's Type B film and Ansco's Tungsten type film are balanced; therefore, they offer an excellent illuminant for use with color transparencies.

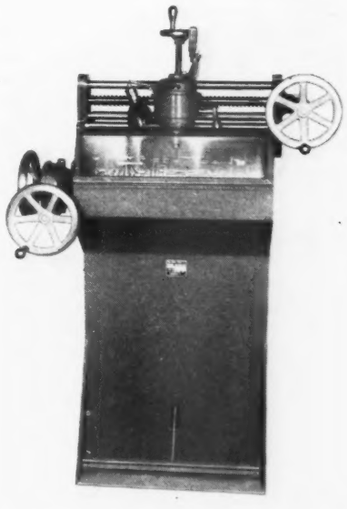
Incorporated in the design of the reflector itself is a modified paracyl contour (parabolic cylinder). With three bulbs mounted base up in the reflector in a vertical line, it is claimed, effective utilization of the light and uniform illumination of all but the largest copyboards are secured. The reflectors are made in right and left-hand style, one for each side of the copyboard. Reflective ability of 70 to 80 per cent is said to assure uniform illumination of the entire copyboard.

The Even-Lite Lamp may be used either on a.c. or d.c. current. Not recommended for wet plate work, since the wet plate is strictly blue-violet and ultra-violet sensitive, in which region any incandescent lamp has the lesser part of its radiation.

Further information may be secured from Even-Lite in care of *Printing Equipment Engineer*.

Fully Enclosed Tubular Stereotype Plate Router

AT THE July ANPA Mechanical Conference in Pittsburgh, J. A. Richards Co., displayed and demonstrated its Fully Enclosed Router for Tubular Stereotype Plates used on Goss and Duplex Presses. Some features of the machine are: (1) Combination free-hand and worm-feed controls both across and around the cylinder, which manufacturer explains is a time-saver in routing tubular and semi-curved plates. (2) The machine is fully enclosed with hinged safety glass eye shields. (3) The scrap metal collects in a dump bucket which is removable from the rear.



View of Richards Fully Enclosed Router. Supplied in two models: (1) For routing Tubular Stereotype Plates, and (2) For routing Semi-Curved Stereotype Plates.

The first machine, states J. A. Richards Co., has been installed in the plant of the Plymouth (Ind.) *Pilot* for routing plates for that paper's new Goss press.

The new enclosed routing machine is built in two models—one for tubular and one for semi-curved stereotype plates. Further information will be supplied by J. A. Richards Co., in care of *Printing Equipment Engineer*.

Hold the Price Policy

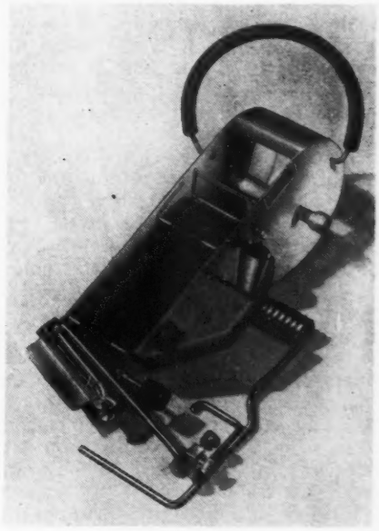
LINOTYPE Supply Co. Inc., 337 Canal St., New York, N. Y., announces it will attempt to absorb the recent 15% increase without raising list prices to the trade. The decision to hold price lines at the pre-increase level was reached at a special meeting of the board, said Joseph Kantor, president of the firm.

In agreement with the vote of the board, Mr. Kantor declared, "We certainly do not believe in price-cutting tactics. We are, however, determined to do everything in our power to put an end to the layer upon layer of price increases in our industry during the past two years."

Improved Dick Mailer

SEVERAL improvements have been made in the Dick Mailer, according to C. P. MacArthur, owner of The Dick Mailer, who also announces manufacture of the present models will be abandoned soon. MacArthur has advised *Printing Equipment Engineer* of the following changes:

1. *Adjustable Motor Arm*—The old arm was a rigid piece of brass rod to which was attached the lever in a loose joint. The lever was, in turn, attached to the blades and as the blades wore down or became dull it was necessary to change the angles involved to increase the pressure. This was accomplished by physically bending either the lever (correct)



or the motor arm (incorrect) with the result that (a) either or both broke and (b) no exact adjustment could be made in such a haphazard manner. The *Adjustable Motor Arm* has an adjustable screw set in a block. By turning this screw, which has a set-screw to keep it firm, the angles mentioned above can be adjusted exactly. In addition to this, as the blades are worn down through regrinding, the same mechanism takes care of this difference in the reduced widths of the blades. Breakage has ceased, said Mr. McArthur.

2. *Adjustable Paste Regulator*—The former paste regulator was pounded into slots on top of a middle plate. To adjust this part it was necessary to get out the old tool-bag, take a hammer and screwdriver and either drive the paste regulator forward or pry it back. The *Adjustable Paste Regulator* now is in the same place but is supplied with two screws that extend to the outside of the machine. By loosening them the regulator can be moved backwards or forwards easily and an exact setting of the regulator obtained. This prevents too much paste flowing beyond the label and causing the bottom paper or magazine to stick to the next.

3. *Endless Belts*—The former belt was sewed together with the result that there was a "hump" where the joint was made even though it was a butt job. The stiches, covered with Scotch tape, were thicker than the belt.

Endless belts do away with the hump and are slightly absorbent thus eliminating slippage of the Dick Strip.

Less important improvements are metal rollers which replace wood rollers; rubber knobs on the propellers; rubber tubing on the thumb rest, and rubber cushioning under the hand grasp. Stainless steel blades, in addition to tool steel blades, are in the experimental stage.

Gardner Circular Drying Time Recorder

WHILE the Gardner Circular Drying Time Recorder was originally designed for measuring the drying characteristics of paints, varnishes, enamels, shellacs, adhesives and various types of coatings, it is also useful for measuring the drying time of printing inks. Total weight of the instrument is approx. 1 lb. Overall dimensions equal 3 in. by 4 in. by 4 in. high.

In operation, the Circular Recorder is placed on a wet film of printing ink (or other film as mentioned above) on any type of fairly plane surface. Motor cord is plugged into a 110 v., 50 or 60 cy. a.c. outlet. The electric timing motor rotates at a speed of one revolution per 24 hrs. (other speeds available). During this time a weighted spherical nib, connected to the motor shaft by means of an arm, impinges the ink film and scribes an arc shaped pattern until the film has dried. A metal templet, having hour marks from 0 to 24 hrs. engraved on the periphery, is then placed on the dried film with the 0 mark on the templet coinciding with the starting point of the test and the periphery of the templet coinciding with the arc-shaped line made by the spherical pin. The hours drying time is then noted on the templet at that point where the pin no longer leaves an impression in the film. Several stages of drying may be noted.

View of Gardner Circular Drying Time Recorder. Useful for measuring drying time of inks. Weight of instrument, 1 lb. Overall dimensions equal 3 in. by 4 in. by 4 in. high.

The spherical pin scribes a circle 2 in. diam.

Test panels of any type may be employed, such as paper, wood, metal, glass, tile, metal foil plastic and others. Drawdowns can be applied to test surfaces made from the same material to which the coating (ink) will be applied.

Circular Records having the following speed movements are available: One revolution per 1, 6, 12, 24 and 96 hrs.

Information regarding specific applications will be furnished by addressing your request to Henry A. Gardner Laboratory, Inc., in care of *Printing Equipment Engineer*.

Celebrates 80th Year

Adam Cook's Sons, Inc., of Linden, N. J., is celebrating its eightieth year in business. The firm was started in business in 1868 and was one of the first manufacturers of lubricating greases and oils. One of its principal products, Albany Grease, has been on the market a long time and is well and favorably known in the Graphic Arts industries.

Adam Cook's Sons, Inc., pioneered the manufacture of special lubricants during the infancy of the automotive industry. At present, the company manufactures a diversified line of lubricants for the printing trades, metal working, electrical, general industrial, marine and automotive fields.

The company maintains a staff of men who have long been associated with the lubrication industry.

Kable's 50th Year

ANNIVERSARY of 50 years in the printing business was commemorated the week of Aug. 23 by Kable Brothers Co., Mount Morris, Ill. Prominent men and women in the publishing business attended festivities.

Central figure honored was President Harry G. Kable who, with his twin brother, the late Harvey J. Kable, started the business in 1898 in a room over a corner grocery store. Today, the plant has a working area of 210,179 sq. ft. and employs 1000 persons in a community of 2500.

Harold D. Ross, a lieutenant-governor of Kiwanis International, was principal speaker at the Mount Morris Kiwanis club meeting at 6:00 p.m., Wednesday, Aug. 25, honoring Harry Kable and the company. An added feature was the second public appearance of the newly organized Kable chorus of male voices.

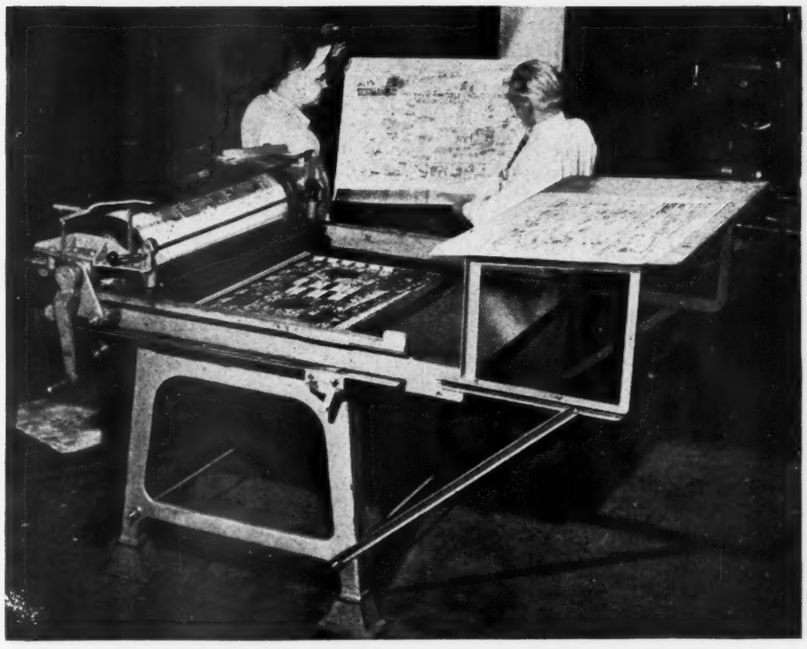
On Saturday night, Aug. 28, a monument to Harry Kable and to the company he helped to build was dedicated.

To its 1000 employes, Kable Brothers Co. distributes a weekly payroll of $72,000. Letterpress and rotogravure processes are used, and the equipment is said to be among the most modern in the industry.

In keeping with present-day practices, the company gives vacations and holidays with pay, and provides a share of group and hospitalization insurance. An up-grading system gives automatic promotion in most of the departments as vacancies occur. In addition, a system of wage payments provides for periodic increases until a top scale is reached.

As a commemorative feature of its anniversary, Kable Brothers Co. prepared a 168 page book, containing past and current facts, illustrated with 281 photographs of plant operations and personnel.

An invitation was extended to several thousand potential visitors by Milo Zimmerman, secretary and sales manager.



Double Width Proof Press—In the plant of the Kansas City (Mo.) *Star*, an average of six double-page advertisements are printed weekly. Advertisers order from 15 to 25 proofs of these double-page ads for promotional purposes. Previously, the ads were proofed by two men hand inking the form with a breyer and the use of felt-covered planer and mallet. Usually, the time required was 10 min.

The firm possessed an old Vandercook hand-operated proof press. Production Manager John H. Lee conceived the idea that this press could be converted into a double-page proof press. Accordingly, a new double width bed and impression cylinder were cast and machined and new roller stocks were procured and covered with composition. Mr. Lee reports it is now a matter of taking 1 min. to secure a proof of a double page and it doesn't take very long to print the number of proofs required by the advertiser.

Linotype Metal Pot Lockup

By WILLIAM J. BUTLER*

**Service Representative, Mergenthaler Linotype Co.*

FAULTY lockup between the metal pot mouthpiece and mold on a Linotype is the cause of plenty of lost time and frazzled tempers. And cleaning up the resulting splashes often means damage to the mold and mold disk. Even the back knife and its adjustment suffer; not to mention the extra wear and tear to the driving mechanism right back to and including the motor.

The method described here for fitting the mouthpiece to the mold is preferred by the writer for various reasons which will be explained as the article is read.

In remedying a faulty lockup, the first operations are to back up the machine so the second elevator starts down; open the vise; after disengaging the mold disk lever from the mold disk slide, pull the mold slide forward. Wipe the mouthpiece clean of metal and finish cleaning with a perfectly flat medium India oilstone held flat against the mouthpiece.[1] It is important that the stone be flat and held flat on the mouthpiece as it is easy to round the edges, ends and corners of the mouthpiece.

Cleaning Jet Holes

A No. 6-0 high speed steel taper reamer dipped in oil and held in a jeweler's pin vise can be used to clean the mouthpiece jet holes, if these jet holes are open sufficiently to receive the tip of the reamer. If the jet holes are filled with dross so the reamer will not enter, run a No. 52 or No. 53 twist drill through the holes first and finish with the reamer. Take care that you do not enlarge the mouthpiece holes by forcing the reamer in past the point where the dross is removed and the reamer cuts into the steel of the mouthpiece.

The mouthpiece vent slots should be cleared of dross accumulation without changing their size or shape and without enlarging the bottom of the vent slot where it extends to the edge of the face that contacts the mold. If the bottom of the vent slot is enlarged it will cause the metal sprue to be large, especially when the mold accumulates residual heat. The enlarged sprues may pile up behind the mold disk and eventually cause a back splash.

Cleaning Vent Slots

One way to clean the vent slots is to grind the end of a flat file to a shape similar to a lathe thread-cutting tool with a V-edge to fit the vent slot in the mouthpiece. Take a mold or blank out of the mold disk and use the bottom edge of the mold pocket for a fulcrum. Protect the bottom of the mold pocket with a piece of brass. Pressing down on the handle end of the tool, using the brass-protected empty mold pocket for a fulcrom will force the V-shaped edge of the tool upward into the vent slots and scrape out the dross. Be careful to start the scraping stroke well up from the bottom of the vent slot because if you enlarge the bottom even slightly, it will increase the size and length of the metal sprue.

Examine the back of the mold to which the mouthpiece is to be fitted. Clean it if necessary. If metal has accumulated on the back of the molds, clean it off and clean and readjust the back mold wiper.

Push the mold disk back into mesh with the mold driving pinion and bring

[1] Incidentally, the stone should be pre-soaked in machine oil to prevent metal particles clinging to the surface of the stone. Also, when the stone becomes too hot to handle, use wiping cloths to protect the hand.

ODORS BIND US TO OUR JOBS

(Abstracted from Address of Welcome by David W. Howe, President, ANPA, and Business Manager of the Burlington (Vt.) *Free Press*, before ANPA Mechanical Conference, Pittsburgh, July 1948)

HAVE you thought much about the little things that bind us closely and make ourselves and our jobs so inseparable? In my native Vermont, the dairyman considers no flower in the garden as offering anything equal to the pungent aroma of the cow barn. And about these sweet, haunting odors that bind us to our jobs: Who among us, emerging from the wilds with a creel full of trout and coming upon a country print shop in a little village, could pass by without lingering for a few whiffs of lush odors more seductive than Chanel No. 5—good old printer's ink? Our sympathies on this subject go to the stereotypers. The future must work up something sweet and aromatic for the stereotype department. Will the ANPA research department kindly keep this in mind? Other occupations less fortunate than newspaper staffs, may feast their nostrils on roses and lilies of the valley, on coffee and french fries, on formaldehyde and lacquer. Give us proof ink, news ink, the pervasive engraving acid odors, and ripe old mailing room paste.

the machine to normal position. Turn the machine forward until the first elevator rests on the vise cap. Open the vise, remove ejector lever link and pull out the mold slide.

Taking the Impression

Coat the back of the mold in position to lock up with a light, even coat of color, applied with a cloth swab. Red lead and oil can be used but a better job can be obtained by using a tube of paint color—red, blue or any color used to mix paints.

The coating on the back of the mold must be light and perfectly even. Push the mold disk back into mesh, close the vise, slide left-hand vise jaw to right against the right-hand vise jaw, remove pot pump plunger pin, and pull mold disk forward onto the locking studs. The closing of the left-hand vise jaw against the right-hand vise jaw is to avoid springing the first elevator back jaw. Turn the machine forward by hand, using the driving shaft friction clutch until the mouthpiece contacts the mold. Turn the machine back until the pot mouthpiece leaves the mold. Move machine forward again until mouthpiece contacts the mold; at this time look at the lower end of the pot cam lever where the eyebolt, nut and locknut extend through the pot lever. As the mouthpiece contacts the mold and you continue to move the machine forward you can check to see that the pot lever compresses away from the back eyebolt nut the correct amount to assure compression on the pot lever spring. You can also feel the amount of pressure on the spring by means of resistance when you turn the machine driving clutch by hand, and whether or not there is any bind to the forward or backward motion of the pot.

Return the machine to the position where the first elevator just rests on the vise cap, and open vise and pull out the mold disk. There should be an imprint of the mold or a part of the mold on the mouthpiece. If the imprint is only on one end of the mouthpiece, shift the adjusting screws on one pot leg to correct. In order to decide whether to move one leg back or the other leg forward, move that leg which will keep the pot legs straddled centrally on the pot leg bushings.

Repeat the red lead or oil color impression and move the pot legs until the impression is equal at both ends or in the middle of the mouthpiece. If the impression is heavier on the bottom of the mouthpiece than the top, endeavor to move both legs back. If heavier on top than at the bottom, move both legs forward.

When you can no longer increase the surface contact of the mouthpiece with the mold by moving the pot legs, use an oil-soaked medium India stone held flat on the parts coated with color impression until the mold makes an even impression on the surface of the mouthpiece.

That Pot Lever

By moving the machine forward and back with the driving clutch by hand, you can determine if the pot lever spring is broken when it is not possible to see that it is broken without taking it out. You can also feel the grind in the pot lever cam roll if any of the rollers are broken and if the pot lever is rubbing or binding against one of the main cams at either side.

Check the clearance on both sides of the pot lever and place the spacing washers on the pot lever shaft so there is equal space on each side and the pot lever roll rides in the center of the pot cam.

There is a sleeve on the pot lever eyebolt which is pinned to the bolt, and which determines the position of the spring between the pot lever and the pot.

Originally, this sleeve is of correct length, and is pinned to the eyebolt in correct position. The only reason for shifting this sleeve would be abnormal wear of the pot cam, lever cam roll or a broken and inaccurately welded pot lever, or pot leg, or the pot legs being a great deal off center on their bushings through previous misadjustment.

When it seems necessary to move the sleeve on the eyebolt be sure to check the pot legs to see that they are near the center of the pot leg bushings. Often the legs are considerably forward or back of center. When they are forward of center, the pot is robbed of that much forward action because the cam that causes the motion always occupies the same position. When the pot legs are too far forward on the bushings and the pot cam applies the forward motion through the pot lever, the cam roll and spring, the pot fails to make its full forward movement. If the pot legs were back of center of the pot leg bushings, the pot will make more than its normal forward movement when the pot cam revolves in its set position.

If the pot lever has been broken and welded inaccurately at some previous time, the sleeve will have to be moved on its eyebolt to compensate for any inaccuracy in welding. If the pot legs have been broken, one or the other or both legs may need be adjusted off center in their bushings.

If the bushing on the pot lever eyebolt must be moved, check the lockup movement by turning the machine by hand.

Checking Pot Movement

Turn the cams forward by hand by means of the driving clutch and see that the pot mouthpiece travels far enough forward to contact the mold. Turn the cams a trifle farther and check to see that you have $\frac{1}{8}$-$\frac{3}{16}$ in. space between the pot lever and the nut on the back end of eyebolt. Turn the machine still farther and see that the pot mouthpiece drops away from contact with the mold; then turn the machine still a trifle farther to the point where the plunger is just about to drop, when the pot should again contact the mold.

Resiliency in Pot Lockup

Leave the machine in that position and examine the pot lever spring—that it is not compressed fully—but that there is enough space between spring coils to allow the lever to move an additional $\frac{1}{4}$ in. forward. In other words, the lockup of the mouthpiece against the mold must be resilient. This is imparted by the pot lever spring.

If you have more than $\frac{1}{8}$-$\frac{3}{16}$ in. space between the nut on the eyebolt and the rear edge of the pot lever when the mouthpiece contacts the mold, it means that the pot is contacting the mold too soon and will contact it too long also, robbing the mouthpiece of too much heat, causing chilled face, or requiring too much heat to make a good slug, which means the casting speed of the machine is cut down. When there is excessive space between the back edge of the lever and the nut on the eyebolt, the pot may stay in contact with the mold from the time it first contacts until after the cast is made, which will surely cause a chilled slug, or abnormally high mouthpiece temperature.

If there is not enough space between the coils of the pot lever spring and the coils are tight, the pot lever will most likely break if anything prevents the pot making its complete movement forward.

Some back splashes which seem to be caused by pot mouthpiece lockup against the mold are the result of other conditions.

Causes for Splashes

A slight leak through one of the screw holes in the end or upper half of the mouthpiece can allow a small amount of molten metal to dribble down on the face of the mouthpiece. This will chill and harden when the mouthpiece comes into contact with the mold. This will allow metal to escape between mold and mouthpiece on the next cast and the metal that does not adhere to the slug will remain on the mouthpiece and solidify when the next contact is made and so build up to the point where a back splash is the final result.

It is very difficult to locate a leaking mouthpiece screw hole because after the splash, metal may be spread all over the mouthpiece and screws. Sometimes a leaking screw hole can be located by wiping the mouthpiece thoroughly and picking out all the metal around the screws with a fine wire flattened at the end, and inspecting the mouthpiece after making a few casts. Sometimes there is a white stain on the mouthpiece under a leaking screw hole.

A back splash will result also when pot leg bushings are loose or pot leg screws are not set against their bushings. This permits the pot to jerk and not draw away smoothly from the cast. One or more jets break from the slug and stay partly in the mouthpiece holes and then melt and dribble down on the mouthpiece face, fouling the lockup.

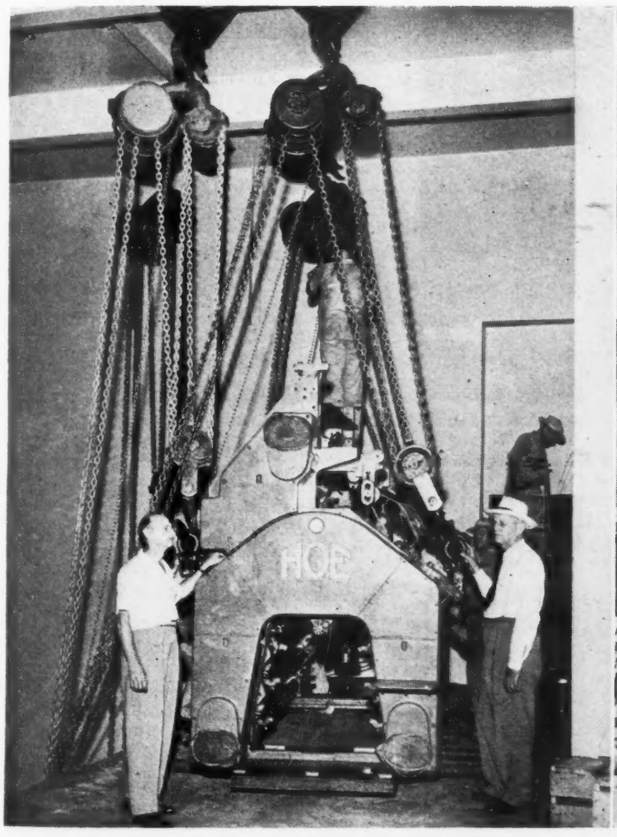
Accumulation of dross in the mouthpiece jet holes will cause these jets to break from the slug, also. The No. 6-0 high speed steel taper reamer will correct this condition.

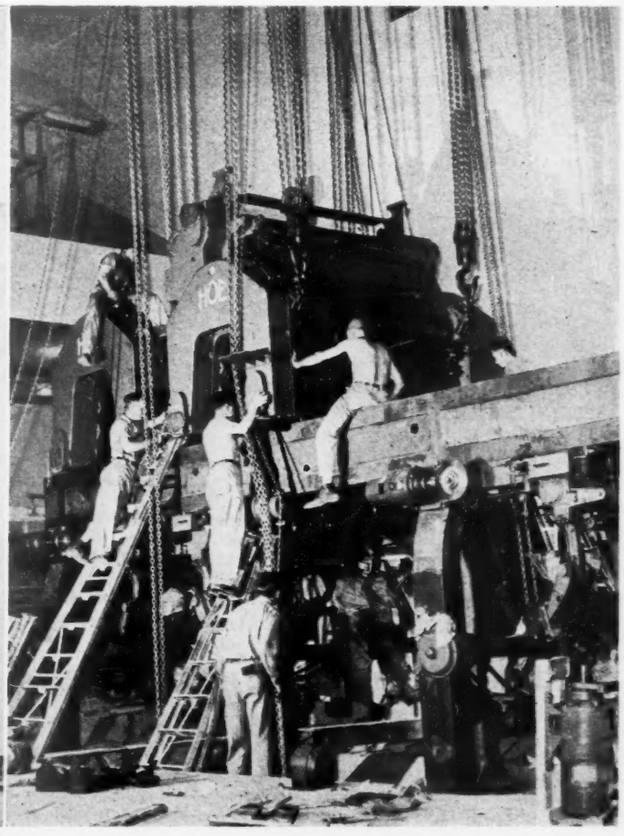
A pot pump plunger that is tight at the bottom of its stroke in the pot crucible well and which starts upward with a jerk, will cause metal to spill out of the mouthpiece jet holes after the mouthpiece has broken away from the slug. The metal on the face of the mouthpiece will foul the next lockup and cause back splashes.

A mold liner that is bent or is of insufficient height to seal perfectly the mouthpiece holes not being used will allow leakage of metal and foul the lockup. The proper remedy, of course, is a new liner.

Expands Southwest Facilities

A new production unit of Federated Metals, division of American Smelting and Refining Company, went into operation during August at the Company's expanded Houston Plant, at 9000 Market St. Road. The facility there will manufacture solders, bearing metals, battery metals, lead ingot, type metals, and special white metal alloys, according to an announcement made by Mr. J. J. Harutun, Houston manager.





The left-hand illustration shows one of the 16 press units recently installed by R. Hoe & Co. in the pressroom of the Dallas (Tex.) *Morning News*. Standing at left is Pressroom Supt. Martin Josch and at right is Mechanical Superintendent Leven T. Deputy. This particular unit is ready to be hoisted upon the press frame by four 10 T. hoists. At right is shown No. 2 press unit which has just been hoisted into place on the superstructure. The installation was completed on July 6 and 28 working days were required. The erecting crew installed 646 T. of machinery which is comprised of the 16 units with four folders. Four units are equipped with color printing cylinders and weigh 18 T. each. The units without color cylinders weigh 13 T. each. Ed Hill, Hoe's factory representative, supervised the erecting job.

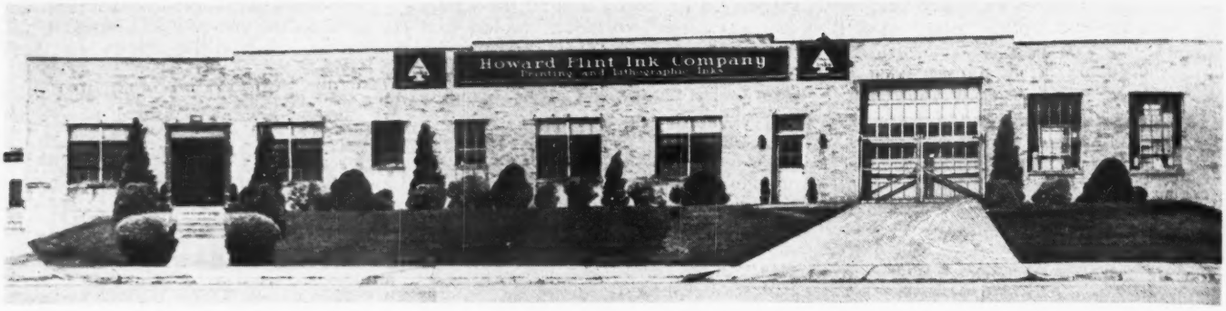
Including the catwalks, the press is 143 ft. long, 26 ft. high and is 13 ft. 8 in. wide. Driving the press are twenty 40 h.p. motors with G-E electronic drive.

The presses are situated in a room 175 ft. long by 75 ft. wide. No pillars obstruct positioning equipment or hamper operation.

When first operated, the presses will be geared for a speed of 40 thousand 32 p. papers per hr., or 132 thousand 32 p. papers using four presses on straight production.

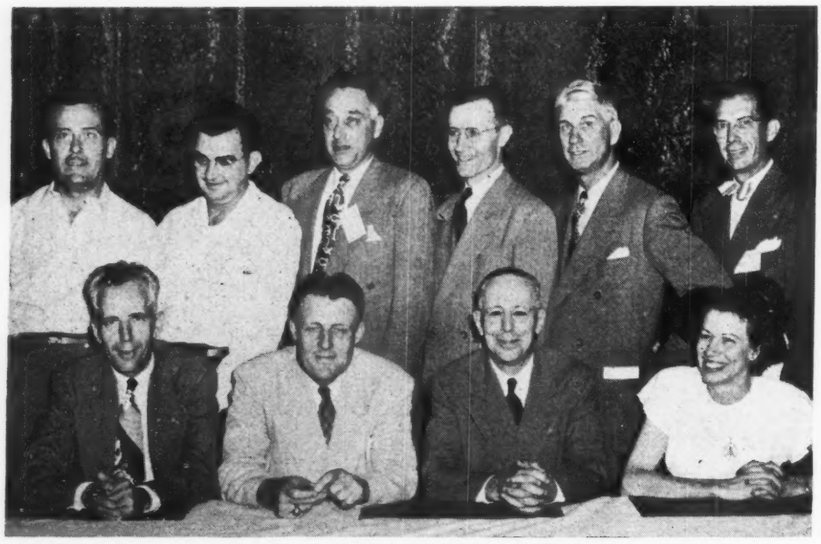
To minimize operating noises, the presses are mounted on lead plates. The entire weight of the presses is carried on a floating dry sand foundation. The mechanical section of the *News's* new building is separated from the office portion by an expansion joint, or double wall, between which is insulating material. Approx. $1 million is involved in the cost of the new equipment.

In the new pressroom, space is provided for two more press lines as long as the present one to accommodate a possible future expansion of 500,000 circulation. At the moment, the *News* claims about one-third of that circulation.



A complete ink manufacturing plant in Indianapolis, Ind., is announced by the Howard Flint Ink Co. at 1000 E. Vermont St. It is served by a private siding from the New York Central Railroad. The plant provides 24,000 sq. ft. space which is fully equipped with new ink making machinery. Ink will be manufactured for every printing process, including newspaper and magazine rotary black and colors.

L. E. Martin, Manager of the new plant, has been with the Flint organization for 16 years. Production and technical departments are under the supervision of Cecil Connor.



Newly Elected Officers and Directors of the Southwestern Photo-Engravers Association—They are (front row): Homer L. Green, Secretary-Treasurer, Dallas, Tex.; J. W. Murphree, President, Fort Worth, Tex.; Harry M. Crenshaw, Vice President, Dallas, Tex.; Mrs. Virginia Nichols, Executive Secretary, Fort Worth, Tex. (Back row) State Directors: E. E. Johnson, Houston, Tex.; Sherwood Morgan, Tulsa, Okla.; Jack Rheinhart, San Antonio, Tex.; Joseph B. Wrenn, New Orleans, La.; R. C. Walker, Tulsa, Okla.; J. Paul Craig, Fort Smith, Ark.
Directors not shown are Ben F. Seward, Kansas City, Mo., and George W. Jackson, Albuquerque, N. M.

Southwestern Photo-Engravers

THE first Annual Meeting of the Southwestern Photo-Engravers Assoc. convened in New Orleans, La., June 27, 28 and 29, with headquarters at the Roosevelt Hotel. The meeting was well attended by members, manufacturer and supplier representatives and their families. One hundred twenty-four persons participated in the entertainment and program sessions.

The first day's program was devoted to trends and developments affecting photo-engraving. How international trade affects photo-engraving was shown forcibly by M. M. Mora, World Trade Director of International House, New Orleans, La., in his discussion *Photo-engraving Speaks an International Language.*

Harry Ellis, Publications Director of Dr. Pepper Company, Dallas, Tex., showed how *A Favor From the Engraver* helps and influences a magazine editor in the use of photo-engraving in his publication.

James Roebuck discussed progress being made in the teaching of photo-engraving in the New Jersey School of Photo-engraving at Huntsville, Texas.

Sam Ross McElreath, President of the International Electrotypers & Stereotypers Association, Inc., brought greetings from that organization and discussed *Coordination, Cooperation and Prognostication.*

J. Homer Winkler, Technical Advisor, Battelle Memorial Institute, Columbus, Ohio discussed *Developments of Significance to Photo-engravers*, which included a report of research work being done in all the Graphic Arts fields and especially in photo-engraving.

The closing day's program was aimed at problems of the individual photo-engraving firm in meeting competition, handling orders in the office and shop, and keeping cost records that will reflect in proper billing.

Oliver A. Ebbing of Peerless Engraving Co., Little Rock, Ark., discussed *Photo-engraving and Offset.* Wm. F. Finney of Southwestern Engraving Co., Oklahoma City, discussed *Plant Efficiency*, and Frank J. Schreiber, Executive Secretary of the American Photo-engravers Association, Chicago, addressed the meeting on the subject, *It's Time to Get Back to Thinking About Costs.*

The next meeting of the Southwestern Photo-engravers Association will be held in Tulsa, Okla., in January 1949.

Granted Full Sectional Status

THE Printing and Publishing Committee of the National Safety Council, formed last October, has been accorded full sectional status as one of the 24 industrial sections of the Council.

The action was taken at a recent meeting of the Council's board of directors upon recommendation of the industrial conference representing all sections. The Electrical Equipment Committee and the Glass and Ceramics Committee also became sections in the official move, 33 years after the first Council sections were formed in 1915.

Chairman of the new Printing and Publishing section is Walter Smith, safety director of R. R. Donnelley & Sons Co. Other officers are: Mason O. Bagent, safety director, W. F. Hall Printing Co., vice-chairman for membership; Lillian Stemp, personnel and safety director, W. B. Conkey Co., secretary and news letter editor; M. B. Pittman, safety director, Standard Register Co., chairman of technical committee; William Block, safety director, Meredith Publishing Co., chairman of program committee, and D. Raeburn Rosendaal, safety director, Courier-Journal and Louisville Times Co., chairman of publicity committee.

Members-at-large are Robert Wessmann, president, J. F. Tapley & Co.; W. A. Anderson, mechanical superintendent, U. S. Government Printing Office, and Bernard J. Taymans, assistant general manager, Printing Industry of America, Inc. Ray Ketchmark is the staff representative of the National Safety Council.

Sectional status will permit the development of educational and technical materials designed specifically for the industry. Developments already published include a safety latch for book presses, gold leaf slitter knife guard, linotype plunger cleaner, a safe way to dross metal pot, safety rack for handling platforms and job press guards.

One session is planned by the section at this year's National Safety Congress and Exposition, to be held October 18-22 in Chicago. On the afternoon of October 19 papers will be presented by Mr. Anderson, mechanical superintendent of the U. S. Government Printing Office, and by Ralph M. Kramer, supervising engineer of the Employers Mutual Liability Insurance Co. Henry P. Conkey, president of W. B. Conkey Co., will preside over a panel discussion. Participants will be Mr. Pittman, of Standard Register Co.; E. Baron, vice-president and general manager of Pacific Press, Inc.; A. Houston, of American Mutual Liability Insurance Co., and Otto R. Wolf, assistant production manager of the Chicago Tribune.

This Congress program precedes by one day the annual Printing Industries of America convention in Chicago, making it possible for delegates to attend both meetings.

ATF Bulk Type Purchase Plan

AMERICAN Type Founders Sales Corp. has announced that 40 trade composition plants in the continental United States have adopted the new ATF bulk type purchase plan, which makes foundry type available for non-distribution systems. A selected list of 70 type series is included, in sizes larger than 12 pt. New type designs, as they are introduced, will be available under the bulk plan. ATF said bulk type is being offered only to trade compositors and typographers who sell type by the line or in forms for use on a non-distribution basis. The plan will not be offered to large printing plants which do their own composition.

Conference Dates (*with organization names and principal officers*)

American Photo-Engravers Association—Hotel Statler, Cleveland, Oct. 7, 8 and 9. Frank J. Schreiber, Commissioner, 166 W. Van Buren St., Chicago 4, Ill.

ANPA Mechanical Conference—Palmer House, Chicago, Monday, Tuesday and Wednesday, June 6, 7 and 8, 1949. Edwin H. Evers, Production Manager, St. Louis *Globe-Democrat*, Chairman of the Committee. Walter E. Wines, Manager, ANPA Mechanical Dept., 370 Lexington Ave., New York 17, N. Y.

Great Lakes Newspaper Mechanical Conference—Gibson Hotel, Cincinnati, January 16, 17, 18, 1949. President C. M. Kirk, Stereotype Supt., Detroit *News*; Secretary Al P. Oberg, Composing Room Supt., Flint (Mich.) *Journal*.

Illinois Newspaper Mechanical Conference—Faust Hotel, Rockford, Ill., Saturday and Sunday, September 25 and 26, 1948. President, Earl Anderson, Supt., Rockford Consolidated Newspapers, Rockford, Ill. Secretary, Howard Colton, *Daily Pantagraph*, Bloomington, Ill.

International Association of Printing House Craftsmen—1949 Convention to be held in San Francisco, dates and hotel to be announced later. President, Grade Oakes, Process Color Plate Co., 522 So. Clinton St., Chicago 7. Executive Secretary, Pearl E. Oldt, 18 E. Fourth St., Cincinnati 2, Ohio.

International Typographic Composition Association—Frank M. Sherman, Executive-Secretary, 1015 Chestnut St., Philadelphia 7, Pa.

Iowa Daily Newspaper Mechanical Conference—1949 conference will be held in Mason City, Ia. Hotel and dates to be announced later. President, Ken I. Waughtal, Kayenay Engraving Co., Mason City, Ia.; Secretary, Paul F. Kamler, Mechanical Supt., Clinton (Ia.) *Herald*.

Kansas Newspaper Mechanical Conference—Hotel Kansan, Topeka, Kas., Saturday and Sunday, October 2 and 3. Vern Williams, President, c/o Topeka Newspaper Printing Co., Topeka, Kas.

Lithographers National Association—W. Floyd Maxwell, Executive Director, 420 Lexington Ave., New York 17, N. Y.

Missouri Newspaper Mechanical Conference—Tiger Hotel, Columbia, Mo., September 11 and 12, 1948. President Beryl A. Troutman, *Courier-Post*, Hannibal, Mo., Secretary-Treasurer O. K. Hammitt, *Monitor-Index*, Moberly, Mo.

National Association of Litho Clubs—Washington, D. C., April 29-30, 1949. President, Albert Tucker, Sauls Lithograph Co., Washington, D. C.; Secretary William J. Stevens, 1776 Broadway, New York 19, N. Y.

National Association of Photo Lithographers—Netherland-Plaza Hotel, Cincinnati, Ohio, Sept. 15, 16, 17, 18, 1948. Walter Soderstrom, Executive Secretary, 317 West 45th St., New York 19, N. Y.

National Graphic Arts Education Association—John G. Henderson, President; Fred J. Hartman, Educational Director, 719 Fifteenth St., N. W., Washington 5, D. C.

National Graphic Arts Exposition—International Amphitheatre, Chicago, September 24 to October 7, 1950. National Graphic Arts Exposition, Inc., A. E. Giegengack, President. Fred W. Hoch, Secretary, 461 Eighth Ave., New York 1, N. Y.

National Printing Equipment Association, Inc.—Edgewater Beach Hotel, Chicago, Ill., October 20, 21 and 23, 1948. James E. Bennet, Secretary, 140 Nassau St., New York 7, N. Y.

New England Mechanical Conference—Hotel Statler, Boston, Oct. 23 and 24, 1948. President, Wm. H. Porter, Mech. Supt., New Haven (Conn.) *Register*. Secretary-Treasurer, Walter C. Crighton, Comp. Room Supt., New London (Conn.) *Day*.

New Jersey Press Association Mechanical Conference—1948 Conference to have been held in Atlantic City, N. J. in June has been cancelled because of inability to secure hotel reservations. President Neal E. Dyer, Mechanical Supt., Camden (N. J.) *Courier-Post*.

Northwest Mechanical Conference—Hotel Radisson, Minneapolis, Minn., February 12, 13, 14, 1949. President, Chas. R. McGuire, Asst. Mechanical Supt., Minneapolis (Minn.) *Star* and *Tribune;* Secretary-Treasurer, Henry Magnus, Machinist, Minneapolis (Minn.) *Daily Times*.

Pacific Mechanical Conference—Roosevelt Hotel, Hollywood, Calif., May 13, 14, 15, 1949. President, Harold Winn, Hollywood *Citizen-News;* Secretary for the North, Edw. N. Conley, color press foreman, San Francisco *Chronicle;* Secretary for the South, Fred J. Moyer, Los Angeles, *Daily News*.

Pacific Society of Printing House Craftsmen—Blair Lord, Secretary-Treasurer, 3650 Fairmount Blvd., Riverside, Calif.

PNPA Mechanical Conference—William N. Hardy. Manager, PNPA, 209-213 Telegraph Bldg., Harrisburg, Penna. Chairman Mechanical Committee, E. O. Davies, Mechanical Supt., Harrisburg (Pa.) *Patriot* and *Evening News*.

Printing Industry of America—Edgewater Beach Hotel, Wed. to Sat. inclusive, Oct. 20-23; James R. Brackett, General Manager, 719 Fifteenth St., N.W., Washington, D. C. 1949 PIA Convention—Hotel Biltmore, Los Angeles, Nov. 14-17, 1949.

SNPA (Eastern Div.) Mechanical Conference—Hotel Buena Vista, Biloxi, Miss., September 27 and 28. Walter C. Johnson, Manager SNPA, P.O. Box 1569, Chattanooga 1, Tenn. Chairman Executive Committee, I. J. Gardner jr., Composing Room Supt., Chattanooga (Tenn.) *Times*.

SNPA (Western Div.) Mechanical Conference—Mayo Hotel, Tulsa, Okla., February 21 and 22, 1949. W. J. Dowell, Head Machinist, Newspaper Printing Corp., Tulsa, is General Chairman. C. W. Tabb, SNPA Executive Committee, 723 Texas Bank Bldg., Dallas, Tex., is Secretary. Chairman of the Supply Men's Committee is Don Malcolm, Dallas Representative, Burgess Cellulos Co., Freeport, Ill.

Southwestern Graphic Arts Conference—E. J. Deubner, Executive Secretary, 130 No. Volutsia Ave., Wichita 8, Kan.

Photomechanical Clinic Speakers at Intl. Craftsmen's Convention, Hotel Cleveland. At left is Andrew Balika, Superintendent of Copifyer Lithograph Corp., Cleveland, who supplemented William Stone's address. Second from left is Chairman Gradie Oakes, President, Process Color Plate Co., Chicago. Third from left is Clarence Rohrich, Secretary-Treasurer, American Photo-Engravers' Assoc., and President of Akron (O.) Engraving Co. Mr. Rohrich presented the case for letterpress, and stressed that photo-engraving would remain in the van because of the consciousness of the industry's need for research, a program which is being continued indefinitely. William Stone (at extreme right) is Production Manager of Copifyer Lithograph Corp., Cleveland. He discussed Offset Color Separation.

Craftsmen's Convention

(Continued from Page 37)

two. To insure perfect contact, the metal back is roughed up with a roughing roller to remove the film of oxidation from the metal and the wood surface. After both surfaces are thoroughly dry, a straight line is scratched into the rubber to form a guide for the mounting of the metal. When the two surfaces have been brought into contact they are subjected to pressure for about 3 hrs. in a hydraulic press following which they'll never come apart, providing the steps have been properly carried out.

Another method of mounting the metal to the wooden surface is that of using the mounting paper commonly used in the mounting of photographs. Heat applied melts the adhesive in the paper and the cuts will stay put.

Pointed specifically to the mounting of electros was the advice to use a sheet of 60 lb. H L paper, heated and then glued to the block. The top of the paper is then glued as is the surface of the metal, the two contacted and then put into an old letter press where pressure applied causes them to adhere. It is contended that the paper takes up any irregularities. It was found, for illustration, that trouble with electros mounted in other ways always had some sort of markings that were blamed on either rollers, or pressure or some other fault. However, following the mounting as described all these markings disappeared.

Offset Color Separation

In his presentation of what he called "a method of color separation," as developed in the plant of Copifyer Lithograph Corp., William C. Stone, the Production Manager, was assisted by the Plant Superintendent, Andrew Balika, and E. A. Lindsay, Lighting Engineer, of General Electric Co. Mr. Stone referred to the need of equipment for making continuous tone color separation negatives as including a camera, color corrected lens, color sensitive dry plates or films, set of color filters and a source of light.

Mr. Stone expressed his pleasure at the number of letterpress houses getting into offset-lith even though they seem to be a bit tardy doing so. With the great similarity in the two processes between offset platemaking and photo-engraving, it was surprising that greater conversion hadn't taken place.

Offset-lithography, like letterpress or any of the branches of the Graphic Arts, are continually seeking short-cuts in production methods. Copifyer Lithograph Corp. had spent some time and money on different methods of color separation and found this method of making use of fluorescent lights for color separation saved them much time in the hand work of correction.

Where many hand produced plates formerly the rule in lithography, today the poster industry probably is the only litho process that still makes hand produced press plates. The hand work of color correction has been found costly and elimination of much of it is the goal of many of the proprietary methods now being marketed.

Here then with a small cash outlay is a method that saves for Copifyer at least 40% of the manual work of color correction on either the negative or positive. Improvements and refinement of the method is now taking place and Stone is certain that far greater savings are possible.

Stone mentioned the factors that go into the making of the color separation. 1. Camera. 2. Color correct lens. 3. Color sensitive emulsion. 4. Filters. 5. Lights.

Of course the acme of perfection in the color separation would be the production of a separation that could be used with no hand work of any kind to distort the values. However, with the material available at this time such correction is necessary. Stone felt that greater work in the field of color sensitive emulsions either on film or plate is a must if the industry is to advance to the degree promised in pre-war predictions.

With the material available at present the dry plate renders a good average result based on the recommendations of the manufacturer. But practice shows that the good average isn't just good enough under the wide range of operations demanded in practical working conditions.

With emulsions static, and camera equipment being as it is, the direction of effort at their plant, reports Stone, took that of improving the light source. Using the light source described in *Printing Equipment Engineer* some months ago, the results achieved have been astounding. Never in any instance has their use added costs to production. But in nearly every case the time consumed in hand work has been cut tremendously. The plant superintendent, Andrew Balica in demonstrating the lighting told of the gratitude felt by the company toward the General Electric Co., and its Engineering Department in the Lighting Division for the work E. A. Linsday has carried on in this development.

Making use of fluorescent lamps or tubes for the lighting of the copy results in the production of better offset press plates for color work at a lower cost, said Balika. Improved continuous tone color separation negatives can be shot from any kind of copy be it water color, fluorescent painted copy, oil paintings, pastels, transparencies or Kodachromes with the new lighting than that possible under conventional methods.

Phosphor in the fluorescent tubes of different colors covered with cellophane also in color, renders a reflected lighting that cannot be obtained through the use of filters in any form, be it glass or film or solution when placed at the lens. It is noted that any type of filter now used carries its own source of impurity through which the light rays must travel, whereas the reflected light traveling from the copy when thrown by fluorescent tubes does not have to travel through any of these defects. It might also be noted that the filtering out of the light rays instead of being done through a filter, now takes place at the copy where the matter of absorption and reflection is taken care of.

Balika repeated that examination of the light ray behind the lens when the conventional carbon lamp was used and the filter reposed in the lens gave them the idea of shining colored light on the copy and reflecting white light. It is true that the weaker source of light makes it compulsory to shoot for longer periods of time; the comparison offered being that of 9 to 12 to 15 sec. being the time under the arc lights while the exposure

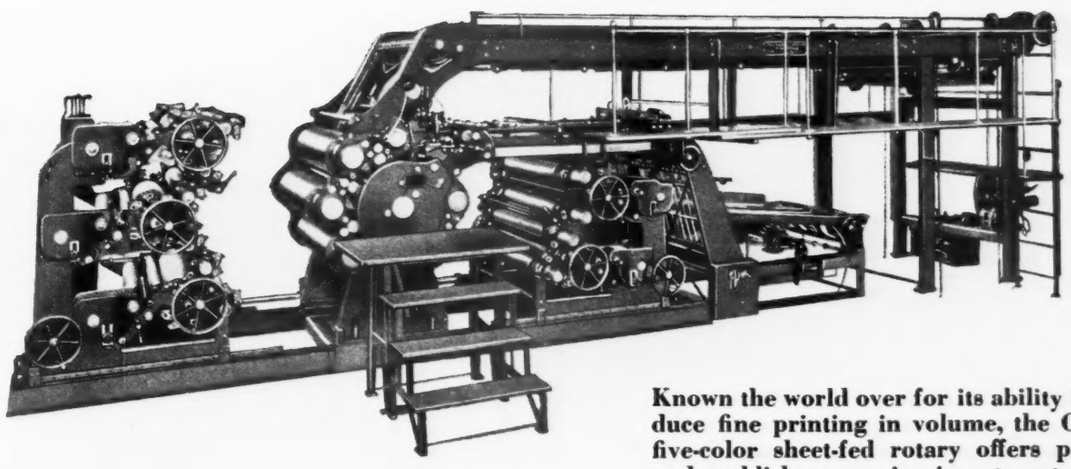
Color Color

Color COLOR

COLOR Color

Color

Color



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The 36" x 48" prints up to 5500 sheets per hour.
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Gravure Clinic at Craftsmen's Convention was informative. Discussions stuck most closely to technical side of process. In center is J. Homer Winkler, Technical Adviser to Graphic Arts Div., Battelle Memorial Institute, Columbus, who presided; Winkler now is third vice president of Association. At left is Allen C. Black, Superintendent, Preparatory Dept., Crowell-Collier Pub. Co., Springfield, O. Black's subject was *Gravure Color Separation and Platemaking*. At right is Frank A. Sportelli of International Color Gravure Co., New York, who discussed *Specialty Gravure*. At this clinic were brought many little known facts related to a process about which not too much is known by printing executives generally.

under the fluorescent lights, one 40 w. tube 40 in. long at each side of the copy runs to 4 min. But in the very softness of the lights lays their value.

Fluorescent tubes pick up the color and pigment on the surface of the sketch and reproduce that as the eye sees it. Arc lamps on the other hand with the glare dig into the copy and give greater rendition which in the end requires time spent in correction.

Demonstrating the results obtained under the new lighting, Balika subjected the yellow of a copy to the blue lighting and showed how the yellows became grey in nature and had a subsequent effect on the sensitive emulsion of the photographic material to the degree of light reflection from their surfaces. In turn, he lit up the copy with the green light and showed how the red printer negative was obtained and then the red light in turn lit up the copy to show how the blue printer was produced. The black printer was obtained by use of the gold tube wrapped with light orange cellophane sleeve wrapper, the whole giving an amber result. This latter production of the black printer yields a far better result for it has an effect on the reds which eliminate or greatly subdues that color.

The filtering effect of the colored tubes dropped out the unwanted colors so effectively that at times they failed to show to the eye.

Transparencies such as the Kodachrome at times offer difficulties in their separation because of the rather dense areas in the shadows. The conventional method of attacking this problem may make use of any of the six methods of masking or their combination. There is the area mask, the contact mask, the diffused mask, the projected light method and others. With the new method using fluorescent lights, it has sometimes been found expedient to combine the arc lights with the tube light, using the tube in the production of the yellow and black printer while substituting the arc lights for the tube in the production of the blue printer negative. In addition, under extreme conditions, gray masks may be resorted to but for the normal transparency the tube lighting has rendered remarkable results.

Reported cuts in manpower have been possible so that today operation of the full complement of presses and equipment is now going on with a reduction of one-third of the force formerly employed. Comparison with other methods shows the advantage of lower cost of installation, lower cost of operation, lays with this method using the fluorescent tube. Combined with that seems to be the fact that it is based upon scientific principles.

Placement of the lights is important and for that purpose it is best to use a light meter, measuring the lighting of the copy in the corners as well as the center. It has been found that a 37½ deg. angle of reflection covers a 40 in. copy on the board and produces the best results, giving the uniform reading required.

Work with a double bank of lights—two on each side of the copy—and an increase from 40 w. to 100 w. in each tube indicates shorter exposures with an equally remarkable result. But there is no indication at this time that a direct color separation screen negative can be produced with the tube lighting. Limitations of light sensitive emulsions prevent the formation of a core hardened dot under the tube lighting conditions.

Gravure Clinic

THE two final technical clinics on production methods and research were held at the Wednesday forenoon sessions. The gravure clinic was conducted under the direction of J. Homer Winkler, Columbus, and a general technical clinic was conducted under the direction of Gradie Oakes.

Allen C. Black, Superintendent, Preparatory Dept., Crowell-Collier Pub. Co., Springfield, O., in his talk on *Gravure Color Separation and Plate-Making* mentioned 672 persons are employed by his firm in connection with gravure operations.

Development of methods used in gravure have passed from the secretive stages to that of "Share Your Knowledge". Gravure, a photographic process bases its entire result upon the negative. The final result of the product depends upon this first step.

Work of any nature, charcoal drawings or crayon transparencies—Kodachromes or the like—water colors, in fact almost any kind of copy can be reproduced by the process.

In the case of color, the copy is worked on first, color swatches, tone scales, register marks and corrections where necessary are made upon the original. Examination of the copy is critically conducted with a view to pursuing operations so that the final negatives will be uniform for it is understood that when 20 pages are printed from the one cylinder, not too much individual attention can be paid to each subject. Their balance must be as near perfect as possible.

The first negative, made in continuous tone, is a color separation negative, the blue filter being used to shoot the yellow printer; the red filter to shoot the blue printer; the green filter to shoot the red printer; and the orange filter for the black printer or the key. These are subject to change where the copy demands a result not possible with the standard group mentioned. In the black for illustration, a green or yellow may be employed as filter depending upon the copy.

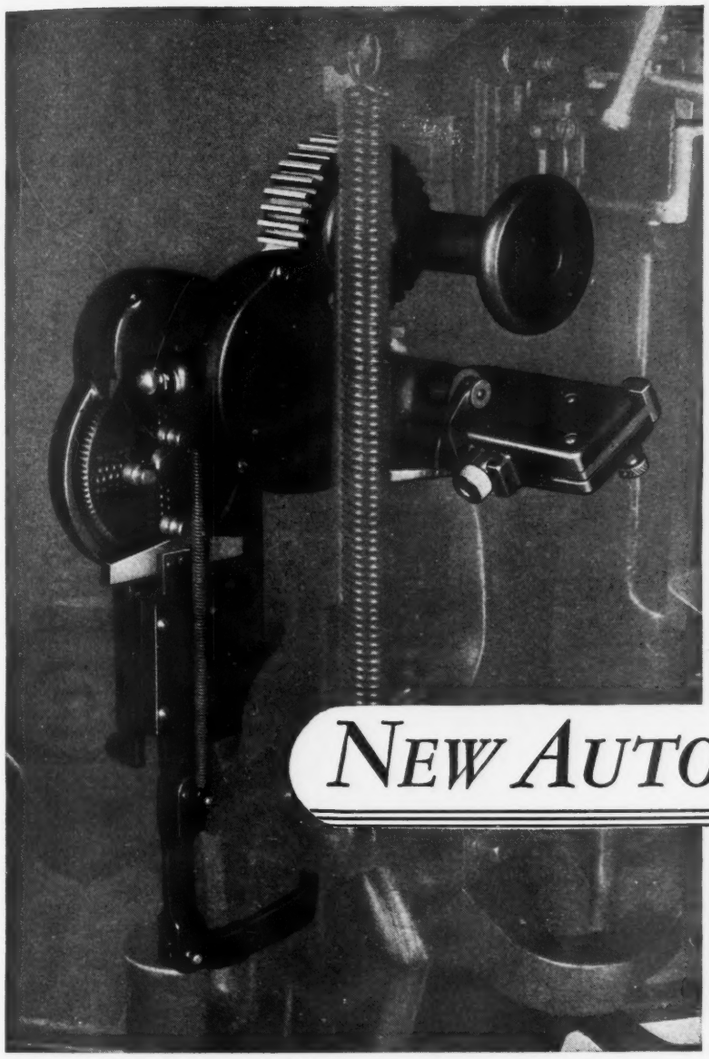
In two-color work the filters again must be selected to meet the needs.

In all cases the final negative must be of a desired or designated density range and color value determined by the policy of the plant.

The negatives are then retouched for the correction of values, two factors determining the amount of retouching: 1—Type of copy, and 2—Amount of color on the job.

In the matter of correction it has been found that water color sketches require the least amount of hand work in correction and are therefore usually suggested. Transparencies with great range of variation offer the greatest problem in attaining uniformity.

In general, four colors require more hand correction and in the connection, as much of the correction is of a mechanical nature so as to keep the more costly item of hand correction at a minimum. Corrector masks are used in this mechanical operation, thin negatives made from



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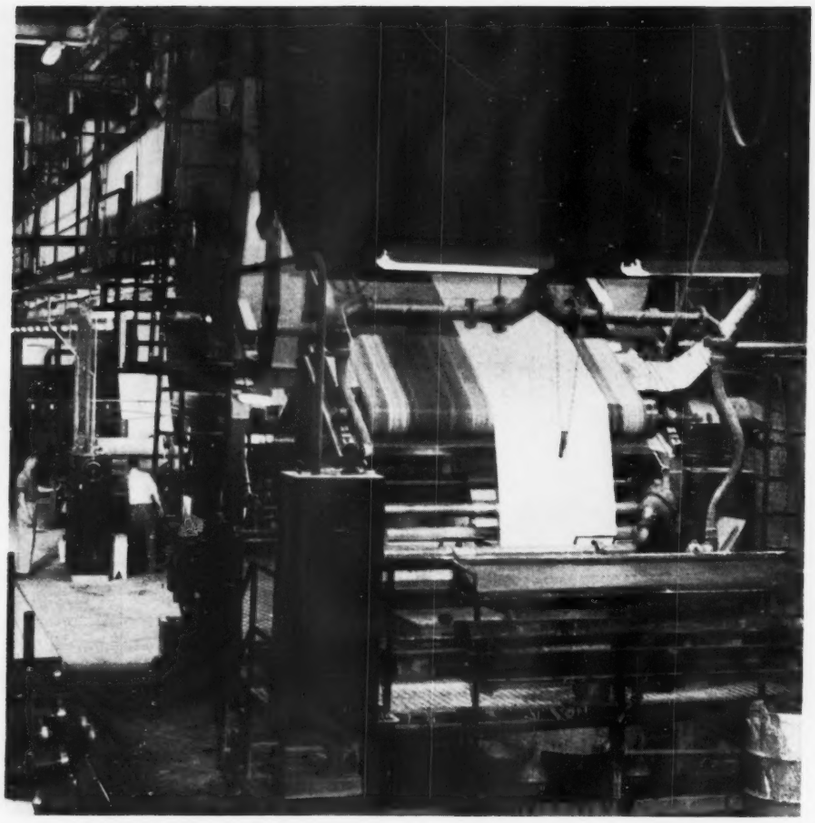

Million $ Improvement—A million dollar improvement program is well underway at the mills of the Watervliet Paper Co., Watervliet (Mich.) coated book and plain offset paper makers.

The roof of the coating mill has been raised some 15 ft. to make room for the installation of three air doctor coaters with high speed drying tunnels. The new coaters which are expected to operate at more than 800 ft. per min., will replace the mill's nine conventional one-side brush coaters. Brush coaters operate at a little over 200 f.p.m. One of the new coaters, an 88 in. machine, is now operating while a second (66 in.) is being erected.

The next largest item was the installation of a new fourdrinier section, dual press, size press, and increase of drying capacity on the smaller (114 in.) of the two paper machines.

Other improvements which are being made are: A pilot pulp mill which was built in the last days of the war; semi-chemical neutral sulphite fibre is made in this small pulp operation. New stokers and fly ash collectors for the power plant. A new washer of improved design for more thorough deinking of filler fibre extracted from books and magazines.

Watervliet's total paper making capacity is expected to be increased about 10%.

some of the colors serving as these correctors. It is often found that a thin negative made from the red helps as a mask in correcting the blue. Then too, correctors on the yellow negative have been used to eliminate or subdue some of the red or the blues that find their way into the separation.

This mechanical work as well as the hand work of correction is carried out on the negative as well as on the positive. In hand correction a gray dye is used to match the color of the emulsion on the photographic plate so that visual perception is possible. This dye may be used locally or generally, in reduced strength or full strength. With the tendency of the photographic emulsions to interpret adjacent areas of slightly varying strength in not too different tones, it is sometimes expedient to use the hi-lighter mask to obtain high-lights in all four colors. This means that there may be as many as three or four films superimposed upon one another to obtain the final positive.

Two processes are open to gravure. One known as the Dultgen process, makes use of a screen positive and a continuous tone positive. The other method, known as Conventional Gravure, makes use of a continuous tone positive only. Both processes make use of the carbon tissue.

In the Dultgen process, the dots on the final copper vary not only as to the size of the dot but also as to their depth.

In Conventional Gravure, however, the dots are all the same size but their depth varies.

Mr. Black explained that the Dultgen Process is used in the production of three and four color work while Conventional Gravure is used exclusively for monotone work and for some three color work. This meant that where the Dultgen Process is employed in four colors, a set of four color screen positives and a set of four color continuous tone positives are used—eight plates in all, two for each color. On the other hand for Conventional Gravure, three colors require but three color continuous tone positives for the final. Of course, to obtain these, in all cases, the original negatives mean extra glasses and often not only the first set of negatives but another double set of negatives and positives as well when added work has to be done.

The screen used on the Dultgen Process is 150 line which uses the ratio of 60 black to 40 white. Correction takes place on the size as well as in the density of the dot. Type that may be needed for the finished subject is either stripped in or double shot in, depending upon the subject. It may be stripped in either on the continuous tone positive or the negative or wherever feasible. Experience dictates the best place.

Following the correction of both positives in the Dultgen process, transfer to the carbon tissue follows. This tissue is purchased not sensitive to light to ensure keeping qualities, the carbon being sensitized at the plant before use with a solution of potassium bichromate. Following its immersion in the sensitizing bath, it is squeeged on the ferrotype tin (an enamelled plate) and dried. Following this period of drying which usually takes about 2 to 2½ hrs., the positives are made ready for exposure to the carbon. Individual pages are exposed, the screen positive being the first one down and after its exposure, the tissue being exposed to the continuous tone positive. The whole is then washed thoroughly, the unexposed gelatine washing away freely and the lesser exposed areas washing away to the degree of hardness attained by its exposure to the light.

It might be mentioned in passing that the screen positive alone used in the Dultgen process will yield a flat result and for that reason it is combined with the continuous tone positive in printing down to the carbon tissue. It is also noteworthy, stated Allen Black, that after thorough washing, no further washing will dissolve any more geltine, regardless of how long it may be subjected to the washing.

Conventional Gravure

Conventional gravure uses a screen of 175 lines to the inch, the ratio of 1¾ black to 1 of white being maintained in the ruling. The carbon tissue in its sensitive state is also exposed to the effect of this 175 line screen first, with the screen being either angled to suit the color or being kept at the same angle depending upon the practice of the organization. Following this exposure the continuous tone positive is used and the whole operation is then followed by washing in the other process.

Both methods produce a sheet of carbon tissue, which essentially is a paper backer holding the gelatine in its various degree of hardened state and which now actually represents the image in positive form, the white or semi-white areas of the copy being represented by hardened gelatine held by this paper backer.

This is then laid to the surface of the cylinder which has previously been scribed with marks for each page, two side marks and either top or bottom being used for registry purposes. Water

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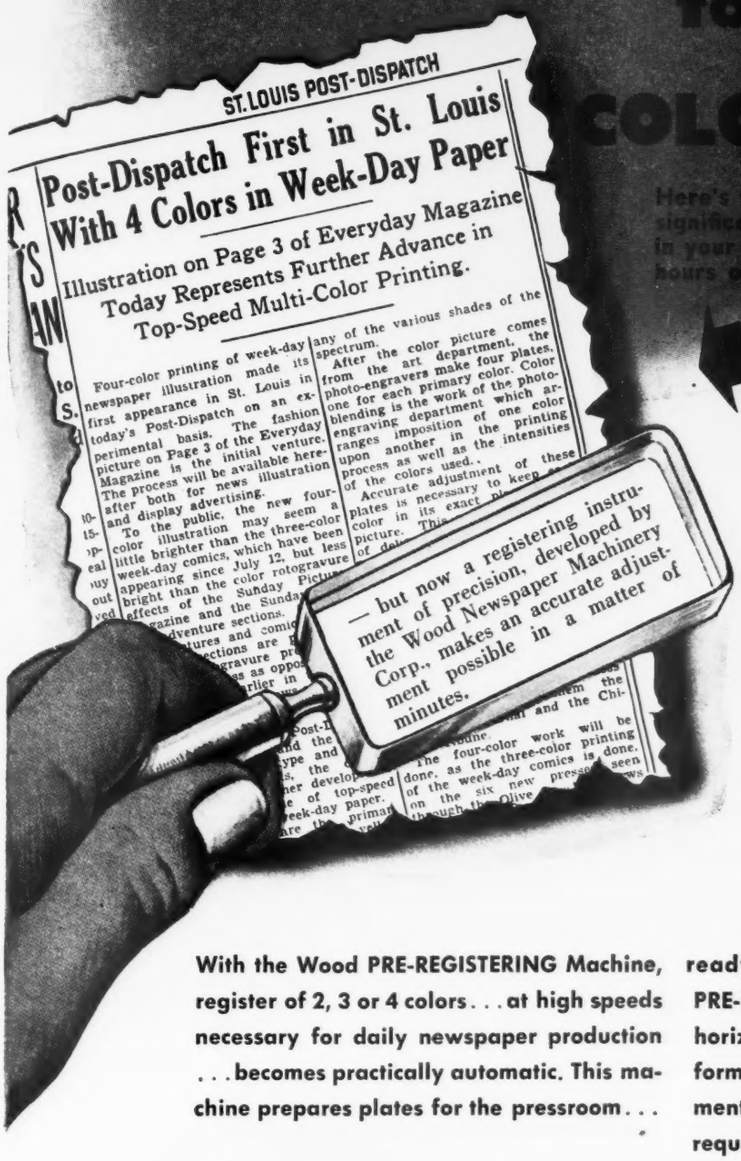
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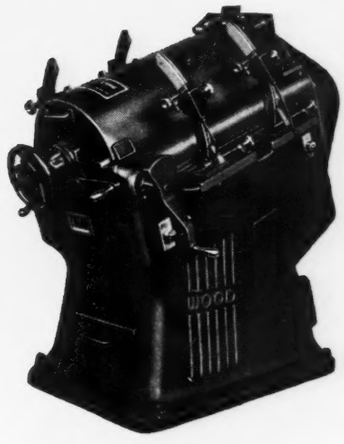

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Share Your Knowledge Clinic at XXIXth Annual Convention of Intl. Association of Printing House Craftsmen was presided over by Vice President (now President) Gradie Oakes (center) of the Association. At this session William C. Huebner (left), Huebner Laboratories, New York, N. Y., discussed *New Targets in Printing Developments*. Mr. Huebner exhibited a new plano "printing" cylinder which is inked without dampening roller system and a new expulsion gravure image cylinder. At right is John C. Rout, Foreman of Siderographers, U. S. Bureau of Engraving and Printing, Washington, D. C. Mr. Rout explained why the counterfeiter always fails in attempting to imitate Uncle Sam's currency. After he had finished, it appeared there was no doubt about the veracity of Mr. Rout's statements.

on the surface of the copper cylinder admits of positioning the gelatine in place and it is then securely fastened by means of a roller passed over the back. The paper support is then lifted off, leaving the gelatine on the surface of the copper cylinder. Hot water development at 100 deg. removes this paper backing with the temperature running to 125 or 130 deg. at times. Development removes the excess gelatine, and then the cylinder is staged to protect the areas where no etching is desired.

Perchloride of Iron is used as the etch. The first etch removing the light deposits of gelatine has a Baume reading of 40 deg. This etch brings in all the heavy tones and is applied for about 3 or 4 min. The second etch with the perchloride solution thinned down with water to a Baume reading of 42 deg. follows this, and is again in turn followed by etches with iron solutions the final one reading 38 deg. Baume. This last etch hits the lighter printing areas which are protected by the thick gelatine deposit.

The etching time for the conventional gravure cylinder usually lasts 20 to 25 min.; that for the Dueltgen Process consumes on the average of 11 to 12 min.

Most plants prove their cylinders upon completion. Corrections on the cylinder follow, re-etching producing the result of getting more color in spots where wanted while reduction of some areas is also possible. It should be noted that the ability to correct the cylinder is limited, yet there is much correction done in plants.

Answering the question of where glass ends and film begins, Black states that glass is used exclusively in all their color work, and only in monotone printing do they use film for photography.

Gravure in Commercial Field

Frank A. Sportelli, Vice President and General Manager, International Color Gravure, Inc., New York, described the use of gravure in the commercial field.

A measure of the increasing popularity of Gravure is found in the figures which show that whereas 2 per cent of the volume of printing in 1930 was produced by Gravure, today it has jumped to 6 per cent. Ability to print on almost any kind of paper at tremendous speeds with fast drying inks has endeared it to a vast variety of products. Its range goes from soap wrappers, food containers automobile dashboards, wall papers, labels, printed transfers, all sorts of cellophane sheetings, even to the printing of pictures on shower curtains. Textile cloths, silk flower cloth patterns, and even men's ties, are old outlets for gravure printing.

With the development in the past few years of the 26 to 42 in. gravure web press, it is believed that gravure printing of a specialty nature will receive terrific impetus. Companies such as Miller Printing Machinery Co., Champlain Co., Inc., Ford Instrument Div. of Sperry Corp., Stoessel Machine Co., Intra-Rota Co., Electric Boat Co.'s Printing Machinery Div. and others are hard at work to produce presses capable of printing at staggering starting and sustained running speeds. Dr. Froner, an Ink and Color chemist, visualizes presses run by some form of jet propulsion being possible because of recent ink developments. Machinery seen at the ATF plant, for gravure printing and the etching of copper cylinders, indicates that the consumer is not far from receiving his product through faster printing mediums.

Frank Sportelli sees a firmly established engraving medium such as photo-engraving giving consistent color reproduction, and proving these with later conversion to gravure printing as line images. He pictures such subjects as labels, greeting cards, and displays, children's books, reproduced by the photo-engraving method, and converted into a gravure negative, then stepped up and repeated as many times as required by the press layout, finally to be etched into the gravure cylinder, and printed as line images from gravure cylinders at starting speeds of from 10,000 to 15,000 rev. per hr.

Gravure research at Battelle Institute (Columbus, O.) is being conducted to the end of reducing the cost of high speed printing.

During the question period, the point was made that the difference between the other reproduction methods and gravure lay in the fact that whereas both letterpress and offset use photosensitized plates, gravure uses the photosensitized carbon tissue.

When discussing improvements in the industry, notice was taken of an improved vacuum frame now available for the gravure industry. Claim was made that the frame shielded the light from the surrounding frames or light sources as well as having the ability to remain cool while exhsusting air and during exposure. This frame is said to cut the printing time from the average of 7 to 12 min. down to a 2 to 4 min. period. In addition, undercutting is prevented by an innovation which makes use of a combination of reflection and other optical principles. This machine is now in practical use in a gravure plant, and will be ready for the consumer market within the next six months.

Another improvement which is receiving attention is that of the rotofilm substitute for carbon tissue which has been introduced by du Pont.

While it is a man-sized job to get paper of any kind, the ideal paper was described as one that will accept the full weight of ink without show-through has good absorbent qualities, is free of extraneous material that might scratch the cylinders, and of sufficient tensile strength to withstand high speeds when run from a web. Some plants use any type of paper from the news print stock to a full weight high gloss magazine stock. However, this requires changing the ink to suit the

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paper, and could very well reduce the speed of running.

When coated stocks are used preference is shown for the machine coated rather than the enamel coated paper. In passing, it might be mentioned that stock which scratches cylinders might compel a chrome coating for those cylinders. It was pointed out, however, that this procedure, too, has its drawbacks, for the coating hinders the correction of work while the cylinder is on the press.

When the question of dot size formation arose, the Intraprint Method was mentioned. In this process the dot size does vary, and as is generally known, the positive is printed down to a cold enamel coating applied to the copper sheet. Incidentally, the Miehle Intaprint Method of Gravure Printing permits the production of press plates by means of the step and repeat machine, making it possible in this manner to produce multiple images on the same plate. But it was pointed out that it is necessary to cut the speed of the press so as to adapt it to the proper ink viscosity.

A. J. Powers, jr., of Chemco Photo Products Co., mentioned his firm's Photo-Printer.

Martin Kiernan of the Art Gravure Corp. of Ohio corroborated Black in his discussion of costs of fourcolor pages.

Inks for Gravure Printing must meet definite requirements. Main factors could be said to be the type of paper for which they are to be used, the size of the run, and the cost of the ink. The latter factor was thought to be the most important one for inks which yielded the best result under similar conditions cost more by their very nature. Gloss inks for gravure printing are being used daily.

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Share Your Knowledge Clinic

Electronographic Printing

WILLIAM C. HUEBNER, outstanding inventor of photomechanical equipment and processes, spoke on *New Targets in Printing Developments*. During the question and answer period he mentioned that he and his staff have spent 12 years and $1 million in developing what he calls "the Electronographic printing press," He expects to deliver the first press to Magill-Weinsheimer & Co., Chicago, as soon as it has been perfected. He declared he would not deliver it until it ran perfectly, and that when he did deliver it, he would see to it that a full crew of experienced men would be furnished with it to train other crews.

In his address he exhibited certain essential parts of the Electronographic press and explained their operations.

Among things Mr. Huebner showed the men during his talk, were a new relief image cylinder and a new plano surface cylinder "which is inked without the dampening roller system. He also showed a new expulsion gravure image cylinder, besides showing two specimens of paper, one "a web of paper" on which the ink is transferred from the relief image cylinder done on the Electronographic Press without pressure" and the other section of a web of paper "transferred from the new expulsion cylinder on the same Electronographic Press without pressure." He explained that the exhibits marked the "changeover from laboratory tests, development work and demonstrations and the beginning of commercial performance."

"You who are interested in advancing the standards of performance in your particular branch of the printing industry, realize that different viewpoints on what is needed to be researched has resulted in separate targets and separate groups of researchers" said Mr. Huebner. "This is because the Graphic Arts is separated by its various methods of printing."

In stating his seven new targets, Mr. Huebner said he submitted them with his evidences of performance, "as Graphic Arts apprentices with a background of over 50 years of intensive work in the old branches of printing." The targets as he stated them are:

"First Target: *Pressureless Printing* to combine all good image processes into one production unit for applying ink, pigment or dyes to paper, textiles or metals.

"Second Target: Finest quality images by using all originals on the image-carry-

(Continued on Page 72)

Patents For The GRAPHIC ARTS FIELD

Covering patents issued June 22, June 29, July 6, July 13 and July 20.

All new patents for the Graphic Arts are reported exclusively for Printing Equipment Engineer by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issuing each week. Printing Equipment Engineer is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforating

2,445,248. CUTTING MACHINE. A simple and effective hydraulic system for operating the gauging mechanism of a paper cutting machine is controlled readily by means of a treadle or like operating member. A servo mechanism is provided for the preliminary operation of the clamping member, the mechanism including a fluid pressure motor responsive to the introduction of hydraulic fluid to cause movement of clamping mechanism. Movement of clamp in either direction is controlled by adjustment of a valve regulating the relative flow of hydraulic fluid to the fluid motor and by-passing the fluid motor. Invented by William R. Spiller, Dayton, Ohio. Assigned to Harris-Seybold Co., Cleveland, Ohio. Application July 22, 1946. 15 claims.

Composing Room Equipment

During the five weeks covered by this report, no patents have been issued for this heading.

Feeding, Folding, and Delivery

2,443,610. APPARATUS FOR DRYING WITH LIQUIFIED GAS is for drying or removing surplus moisture from fabrics, foods, paper, printing and lithographic work, photographic film or prints, etc. Apparatus consists of a supply tank for liquid gas, substantially 100% moisture-free, such as CO_2. An expansion chamber is connected to the tank. The tank is provided with the usual pressure gauges, connections, etc. There is a transversely disposed coil in the expansion chamber. Deflecting means in the chamber permits uniform distribution of gas to and over the coil to heat the gas. Heating coil is regulated by a thermostatic device. A conduit connects the expansion chamber to the treating chamber. A fan or blower withdraws the heated gas from the expansion chamber and forces the gas into treating chamber and into contact with the material to be dried. Moisture-laden gas is continuously discharged from the treating chamber. The drying chamber may vary in size, shape and construction in accordance with the requirements for the specific material being dried. Invented by Esther R. Elder, Pasadena, Calif. Assigned 40% to William R. Harriman, Hondo, 10% to Esther Anne Harrington, Pasadena, and 10% to Mary Ellen Peachman, San Francisco, Calif. Application December 20, 1944. 4 claims.

Miscellaneous

2,445,363. THE ELECTRODE EXTENSION disclosed is particularly for use in arc lamps for engraving, lithographing, blue-printing, etc. It increases the useful life of an electrode after, in accordance with conventional practice, it becomes too short to be held in the electrode holder. The extension consists of a cylindrical body having an enlarged portion at one end, the body being provided with an axial and a counter bore. The counter bore is equal in diameter to the outside diameter of the body and receives an electrode. An electrode ejecting plunger is also mounted in the bore. Invented by Homer L. Phillips, Charleston, W. Va. Unassigned. Application January 27, 1948. 4 claims.

Plate Making

2,444,205. PHOTOGRAVURE PRINTING PLATE comprises a water- resistant base sheet and three superposed coatings. The base coating comprises a relatively heavy, swellable, partially insolubilized, water-sorptive photo-sensi-

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tizable protein composition bonded to the base sheet. The intermediate coating is a thin water-soluble, photosensitizable polyvinyl alcohol. The top coating is a water-soluble, photo sensitizable protein adhering to the intermediate coating. Top and intermediate coatings permit light penetration to base coating. Unexposed areas of base coating swell to a level above exposed areas of base coating when plate is subjected to aqueous treatment to provide an intaglio printing plate. Pigmented casein is the preferred protein, and such pigments as satin white, titanium dioxide, barium sulfate, zinc oxide, etc. are usable. Invented by William G. Mullen, Danvers, Mass. Unassigned. Application March 27, 1944. 6 claims.

Printing Inks and Related Chemicals

2,443,735. EMULSION COPOLYMERIZATION OF UNSATURATED ALKYD RESINS. Invention relates to resinous materials which are reaction products of a reactive resin of the alkyd type with substances which contain the polymerizably reactive $CH_2 = (<$group, particularly the vinyl compounds or the alpha-methyl substituted vinyl compounds, and to the preparation of such resinous material. Products are useful primarily for molding and for various coatings, as impregnants for paper, fabric, etc., and they may be printed on cloth. A mixture containing 50 parts of vinyl acetate and 50 parts of polyethylene glycol maleate resin (a mixture containing hexaethylene glycol as the major constituent with minor amounts of other polyethylene glycols is used in making this resin) is shaken or mixed with a high speed stirrer with 100 parts of water. To the resulting emulsion 0.05 part cobalt chloride is adder together with 10 parts of an autodispersible green dye. Such an emulsion will cure in a short time at 90° C. if printed on cloth and withstands soap and water washing and pressing. Invented by Edward L. Kropa, Old Greenwich, Conn. Assigned to American Cyanamid Co., New York, N. Y. Application June 12, 1943. 4 claims.

2,444,013. ARYLAZOARYLGUANIDES disclosed are useful as printing inks and textile printing pastes and may be designated at 2-hydroxy-4-amino-6-arylazoaryl-1,3,5-triazines. They may be prepared by diazotizing an aromatic substituted guanide, which contains an amino aromatic coupling compound, containing an amino and/or hydroxyl group attached to the aromatic ring, through the diazoic group of the diazotized guanide. Among the aromatic substituted guanides which may be diazotized and coupled with aromatic components to form new dyes are those such as p-amino-benzoguanide, m-amino-benzoguanide, m-amino-phenoxyacetoguanide, (3 - amino - 5 - hydroxyphenyl)-stearoguanide, and the like. Some of the dyes may be metallized with copper, manganese, cobalt, etc. Invented by Jack T. Thurston, Riverside, Conn. Assigned to American Cyanamid Co., New York, N. Y. Application August 24, 1943. 1 claim.

2,444,263. FUMARIC ACID-CONJUGATED HYDROCARBONS ADDUCTS. The resins obtained by use of the adducts of this invention are highly desirable for use in printing inks. They are said to exhibit the cardinal prerequisites of ink vehicles such as high gloss, good mineral spirits solubility, fast drying and good pigment wetting properties. In the process disclosed fumaric acid is reacted with at least one conjugated diene hydrocarbon in an aqueous medium in a closed vessel at 100-200° C. until the reaction is complete. The resins, produced by reaction of adducts with polyhydric alcohols, are suitable for use in various coating compositions. They may be used in marproof baked enamels and in sizing, water-proofing and crease-proofing textiles, etc. The adducts are usable in the manufacture of alkyd resins as an economical substitute for phthalic anhydride. Invented by Leslie C. Lane and Charles H. Parker, Jr., Stamford, Conn. Assigned to American Cyanamid Co., New York, N. Y. Application July 17, 1945. 8 claims.

Reissue 23,016 of 2,319,265. TEXTILE PRINTING PASTES which maintain their strength for prolonged periods may be prepared by combining a diazo salt of a primary arylamine of the group consisting of meta chloro aniline, 4- and 5-chloro-2-amino-toluene, 4-chloro-2-nitro-aniline, 3-nitro-4-amino-toluene, 5-nitro-2-amino-toluene, 4-nitro- and 4-chloro-2-amino-anisole, 3-nitro-4-amino-anisole, 5-nitro-2-amino-anisole, 2,5-dichloroaniline, dianisidine, 1-amino-naphthalene and 1-amino-anthraquinone and a diazo salt printing paste stabilizer. The latter is of the group consisting of alpha-beta unsaturated aliphatic mono- and di-carboxylic acids having 4 to 6 carbon atoms and the water soluble sodium and potassium salts of the acids. Examples of the aliphatic carboxylic

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acids which may be used include maleic, oxalic, and the like. Invented by Swanie S. Rossander, Holly Oak, and Chiles E. Sparks and Carl W. Maynard, Jr., Wilmington, Del. Assigned to E. I. du Pont de Nemours & Co., Wilmington, Del. Originial application Sept. 25, 1940, application for reissue December 4, 1947. 8 claims.

2,445,569. SULFONATED POLYBENZYL. A process is claimed for preparing a sulfonated polybenzyl compound containing one sulfonic acid group for every four benzyl radicals. It comprises reacting with chlorosulfonic acid, at a temperature between 0° and 10° C., a reaction mass obtained by adding benzyl chloride to a suspension of aluminum chloride in an organic solvent at a temperature below 10° C. The polybenzyl sulfonic acids and their salts possess utility as synthetic tanning agents (syntans), as dispersing agents for pigments and vat dyes and as wetting and surface active agents. Invented by Arthur Lawrence Fox, Easton, Pa. Assigned to E. I. du Pont de Nemours & Co., Wilmington, Del. Application July 17, 1944. 1 claim.

2,445,632. INDIGOSAL COMPOSITION COMPRISING A NAPHTHOL SULFONATE. Cotton, wool, or rayon fabrics are printed in a conventional manner with the printing pastes of the invention, after which the characteristic blue color of the tetrabromindigo is developed on the fabric by immersing it in a slightly acid aqueous bath, or by steaming in the presence of acid. Formic, acetic or propionic acid may be used. The compositions are powders or pastes. They have, as essential ingredients, a salt of an Indigosol derived from tetrabromindigo, preferably 5,7,5′, 7′-tetrabromindigo, and a salt of one or more naphthol sulfonic acids, e.g., 1-naphthol-2-sulfonic acid, 2-naphthol-7-sulfonic acid, etc., which are effective in promoting development of the dyestuff to its colored form. A printing paste may be prepared by admixing with the powder, an oxidizing agent such as sodium or potassium chlorate, chromate or dichromate, etc., in an amount sufficient to oxidize the leuco dyestuff corresponding to the Indigosol, a liquid medium such as water, alcohol, or glycerine, etc., and a printing gum, e.g., British gum or gum tragacanth. Other printing aids such as starch, dextrine, sugar, urea, etc. may be added. Invented by Earl L. Pelton and Charles O. Hutchenreuther, Midland, Mich. Assigned to The Dow Chemical Co., Midland, Mich. Application October 5, 1945. 15 claims.

Printing Presses and Equipment

2,444,186. CONTROL FOR MOTOR DRIVEN PRINTING PRESSES, which include printing units and folders, uses a set of push button switches for each press unit to effect full control and selective slow speeds of each unit. The control includes a main switch and a slow speed switch for jointly completing the motor primary circuit. The latter switch can stop the motor while the main switch remains closed. The control for both switches comprises an inch switch to effect closing and opening and a timer to delay opening of the main switch in response to the inch switch. This provides a period in which another inching operation may be initiated by reclosure of the slow speed switch. Braking connections are used to bridge certain terminals of the motor primary and to connect certain terminals of the motor primary to supply circuit, the latter of the broking connections being subject to interruption automatically by the main switch under the control of the timer. Invented by William H. Elliot, Shorewood, and Cyril P. Feldhausen, Wauwatosa, Wis. Assigned to Cutler-Hammer, Inc., Milwaukee, Wis. Application Dec. 23, 1946. 20 claims.

2,444,547. PRINTING MACHINE. In this late news or "non-stop" printing mechanism lateral movement of the impression cylinder assembly is effected automatically upon synchronization of the speeds of the impression cylinder (or impression cylinder assembly) with that type cylinder with which the impression cylinder (s) is to be engaged. Besides the impression cylinder assembly (which may contain one or two impression cylinders) the mechanism includes a pair of type cylinders arranged at opposite sides thereof. The impression cylinder is movable laterally in bearing housings on the press frames into impression engagement with either one or other of the type cylinders, either of which may itself be movable toward the impression cylinder(s). Lateral movement is effected by a reversible electric motor automatically actuated through a switch when the speed of the then inoperative type cylinder has been brought into synchronization with that of the impression cylinder assembly. Separate electric motors which bring type cylinders up to speed are de-energized upon engagement of impression cylinder assembly with either of the type cylinders. Invented by William

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Arnold Whitehead, Fulwood, Preston, England. Assigned to the Goss Printing Co., Chicago, Ill. Application Nov. 21, 1944, in Great Britain Sept. 14, 1943. 6 claims.

2,444,656. INKING MECHANISM FOR PRINTING MACHINES is designed for maintaining the drive of an ink pump in a forward direction when the printing press drive must be reversed. It is suitable for use with a printing machine having more than one printing couple. One application is for a rotary printing machine having a driven form cylinder and an inking mechanism including an ink pump having an operating shaft. It also includes a reversible drive unit to drive the ink pump shaft from a shaft driven from the printing machine regardless of direction of rotation of the form cylinder. Drive unit reversing mechanism is made up of a drive shaft bearing a coupling, a driven shaft having a bevel gear, a gear housing rotatable about the axis of the driven shaft and rotatably supporting an intermediate shaft with extremities arranged to be connected to the coupling. A second bevel gear meshes with the first one. The driving and driven shaft are so disposed that the gear housing may be turned to engage either end of the intermediate shaft with coupling and thus effect reversal of rotation of the driving shaft without changing the direction of rotation of the driven shaft. Invented by Frederick Lamatsch, Grantwood, N. J. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application August 24, 1945. 14 claims.

2,444,863. METHOD FOR MECHANICALLY SIMULATING GENUINE OIL PAINTINGS may be applied to previously printed matter carried not only by individual sheets or cards, but by an endless web of paper as it passes between the printing press on which the initial colors are printed, and the folder, rewinder, or sheet cutter, such as in the case of producing newspapers, magazines or books. Method comprises surprinting a transparent adhesive in liquid form upon previously printed design over certain portions only, applying a fusible, resinous powder to the adhesive, removing excess powder and solidifying the adhesive and powder. The portions will then be formed with raised transparent surfaces. Invented by Isidor Tornberg, Plainfield, N. J. Assigned to Dadson Enterprises, Inc., New York, N. Y. Application June 28, 1945. 4 claims.

2,445,140. THE DOCTOR BLADE STRUCTURE disclosed is for use in printing and like machines and particularly for use in the textile printing art for spreading color or printing medium on a surface having uneven portions, e.g., hemmed curtains. It comprises a metal blade presenting a longitudinally extending lower edge for normal engagement with a stencil in engagement with the surface. The blade has a cut-out portion in lower edge. A piece of rubber in strip form is attached to the blade. A strip of fiber is secured to the rubber and extends beyond it at lower edge of blade for engagement wth the stencil. Rubber and fiber strip fill the space affored by the cut-out for yielding to an inward movement of the stencil as it passes over an uneven surface of the material. Invented by Charles A. Hanington, Freeport, N. Y. Unassigned. Application October 5, 1946. 6 claims.

2,445,143. PAPER FEED GUAGE for printing presses may be attached to any flat platen press for the purpose of holding a sheet of paper and to obtain absolute registration which is particularly important in over-printing, e.g., in color work. A pair of U-shaped brackets are mounted parallel to the sides of the platen of a printing press. Each bracket has upstanding lugs. A bar is slidably supported in the lugs of each bracket. Bars may be adjusted longitudinally of the brackets. A slider is mounted on each bar and may be retained in an adjusted position on the bars. A holding strip extends between sliders. A tightening band surrounds one of the bars and is movably positioned by one of the sliders and it has hooked engagement with one end of the holding strip. The band may be rotated about bar to effect a tightening of holding strip, whereby paper holding means may be positioned on the platen. Invented by Carl Lanzendorfer, San Francisco, Calif. Unassigned. Application October 2, 1946. 1 claim.

2,445,271. ELECTROSTATIC CHARGES are eliminated and grounded on one or both sides of webs or sheets by the apparatus disclosed. The apparatus may serve as a support or guide for a sheet or web in its passage to or from printing rolls or on its way from a printing element to widing roll, etc. The apparatus includes a roller arranged to rotate with its periphery in conductive con-

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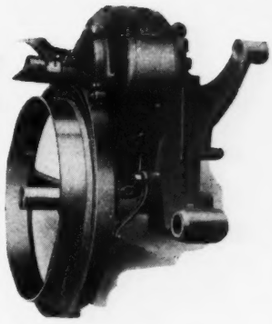

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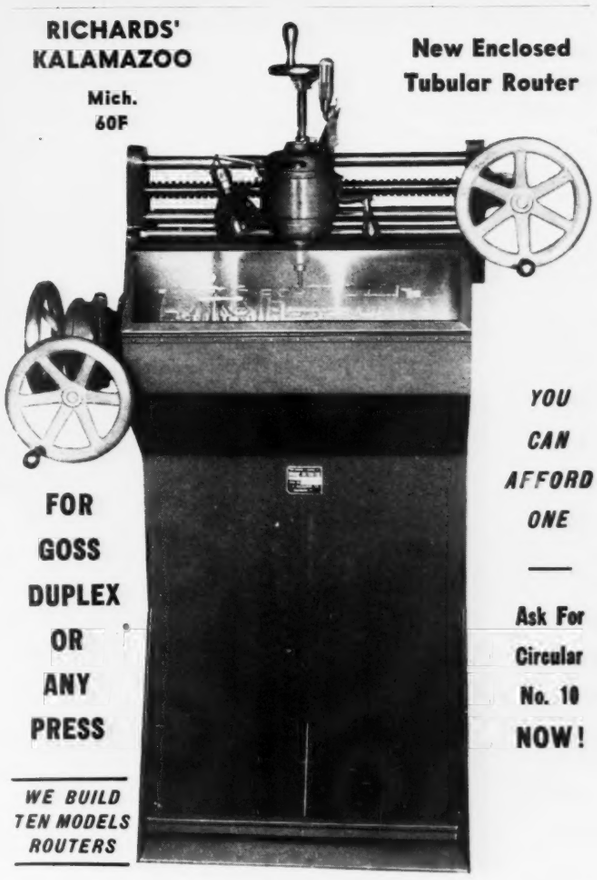

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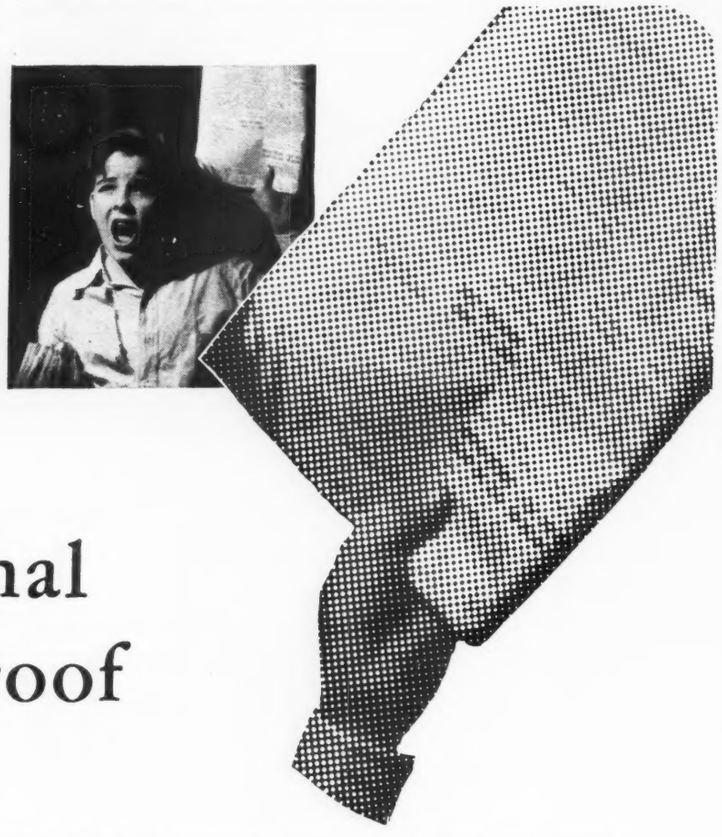
tiguity with the traveling sheet. This roller has a central longitudinal shaft and a tube surrounding and spaced from the shaft. Opposite insulating sleeves are secured on the shaft and extend within opposit ends of the tube, supporting and insulating the tube from the shaft. A series of relatively thin electrically conductive transverse annular discs are loosely sleeved on the tube approximately face to face with each other. The discs are provided around their outer edges with outwardly directed projections having closely spaced outer ends. Electrically conductive rings are supported by the insulating sleeves at opposite ends of the discs. At least one of the sleeves is adjustable toward the other within the tube. The clamping ring supported thereby has a portion movably surrounding the tube and is adjustable axially relatively to the tube by adjustment of the adjustable sleeve for clamping the discs between the clampings. An electrical conductor is in electrical connection with one of the clamping rings. Invented by William C. Huebner, New York, N. Y. Unassigned. Application March 17, 1945. 1 claim.

For Patent Research in the U. S. Patent Office, or a prompt estimate on any type of search, address INVENTION, INC., Munsey Bldg., Washington, D.C.



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SNPA (Eastern Div.) Mechanical Conference

The Southern Newspaper Publishers Association announced August 16, that the 1948 Southern Newspaper Mechanical Conference (Eastern Div.) will be held at the Buena Vista Hotel, Biloxi, Miss., September 27-28. Most of the delegates and visitors are expected to arrive at Biloxi on Sunday, September 26, and the supply and equipment exhibits will be available for inspection beginning on that date.

Luther Wright, Mechanical Superintendent for the New Orleans (La.) *Item*, has been selected as Chairman of Arrangements for the conference. The chairman of the Supply Men's Committee is Owen W. Asbell, Atlanta district manager for Ludlow Typograph Co. Tom Tanner, labor commissioner of the SNPA, will represent the sponsoring Association in making conference plans.

Executive Committee for the Southern Newspaper Mechanical Conference (Eastern Div.), 1948, is as follows: Chairman, I. J. Gardner, Jr., Foreman Composing Room, Chattanooga (Tenn.) *Times*; H. R. Capps, sr., Chief Machinist, Jacksonville (Fla.) *Times-Union*; Henry M. Duke, Mechanical Supt., Charleston (S. C.) *Post & Courier*; Harry Wilson, Foreman Stereotyping Dept., Birmingham (Ala.) *News & Age-Herald*; A. D. Peoples, Foreman Pressroom, Raleigh (N. C.) *News & Observer*; John C. Steele, Foreman Stereotyping Dept., Louisville (Ky.) *Courier-Journal & Times*; Luther Wright, Mechanical Supt., New Orleans (La.) *Item*; A. M. Brice, Foreman Pressroom, Miami (Fla.) *Daily News*.

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USE of Spherekote tympan and frisket paper to give sharp impressions and eliminate offsetting on cut friskets is described in a four-page illustrated folder, *How to Improve Your Proofs*. A sample of Spherekote paper, which is coated with 30,000 microscopic glass spheres per square inch, is included with the folder. Folder is available on request to Minnesota Mining and Mfg. Co., direct, or *Printing Equipment Engineer* will gladly pass along your request.

Spiral Binding's New Distributors

Two new distributors have been appointed by the Spiral Binding Corp., Inc., New York in the Western and Southwestern States. The firm of A. E. Heinsohn of 1443 Blake St., Denver, Colo., will act as representatives in Colorado, Wyoming, New Mexico, Utah, Arizona, Nebraska, Kansas and South Dakota.

For Texas, Arkansas, Oklahoma and Louisiana, the Southwestern Printers Supply Inc., 1801 Federal St., Dallas, Tex. will act as distributor.

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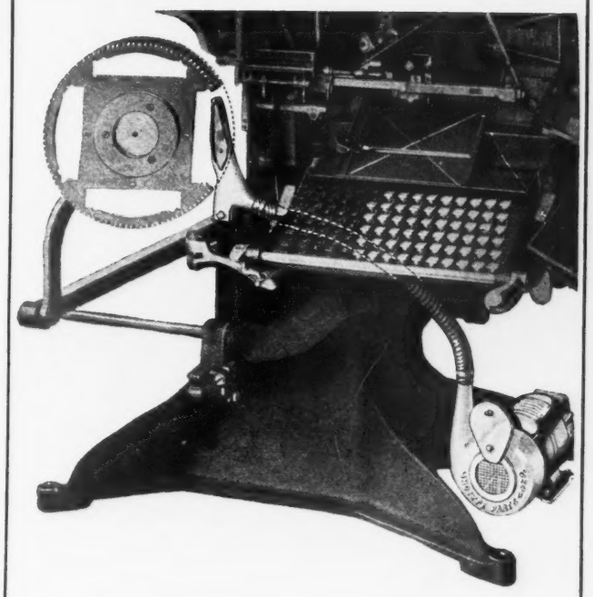

is a necessity on those Linotype and Intertype machines which cast the heavier slugs. More slugs, and better ones, are the natural result of keeping the molds cool.

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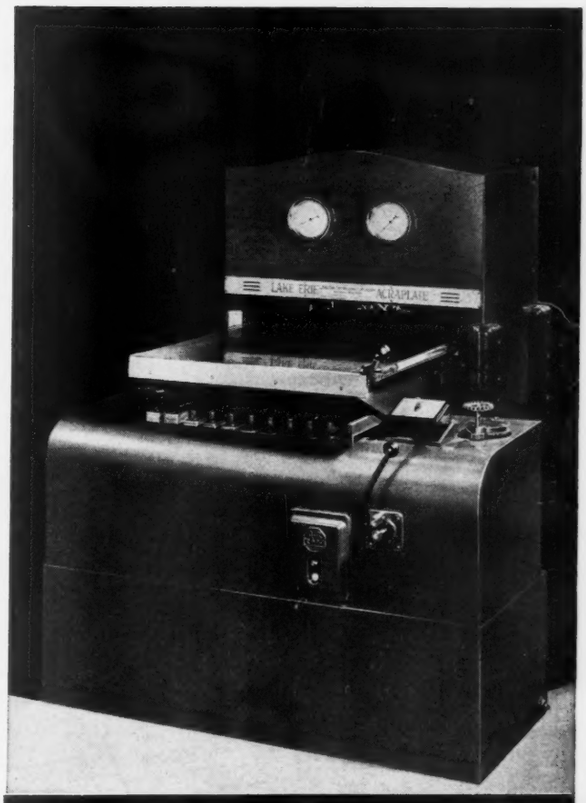

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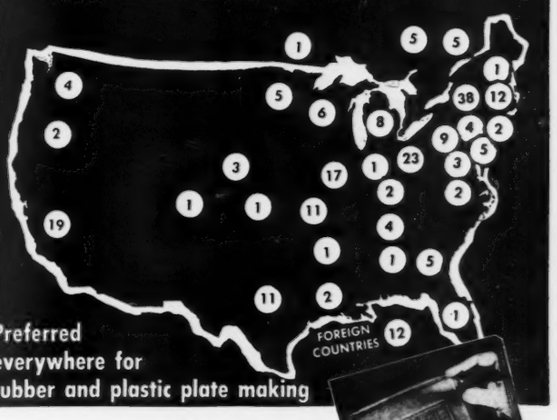

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National Safety Congress

The 36th National Safety Congress and Exposition, sponsored by the National Safety Council, will be held in Chicago from October 18 through October 22. Five leading hotels will house the safety sessions and expositions. They are: Stevens hotel, for the industrial safety exposition and industrial sessions; Sherman hotel, for the public safety exposition and traffic, farm, home and women's safety sessions; Morrison hotel, for industrial and school and college sessions, and Congress and La Salle hotels, for industrial sessions. For further information, write to George E. Burns, National Safety Council, 20 N. Wacker Drive, Chicago 6, Illinois.

EXECUTIVE Qs

Everett Bloomster, 46, Western Advertising Manager for *Printing Equipment Engineer*, passed away at his home in Glen Ellyn, Ill., Saturday morning, August 14. Cause of death was cancer. Funeral services were held at a funeral home, 203 Marion St., Oak Park, Ill., on Tuesday afternoon, August 17. Burial took place at Mt. Olive Cemetery. He is survived by his wife Myrtle and two daughters. His connection with *Printing*

Equipment Engineer extended over a 14-year period. He was well known to many printing executives and to manufacturer and supplier company executives. Mostly, he covered the territory consisting of Illinois, Wisconsin, Minnesota, Michigan and Indiana. He was gifted with a "wear-well" personality and was universally liked and respected by all with whom he came in contact.

To coordinate the increasing manufacturing operations of E. P. Lawson Co., Inc., Adam Altglass has recently been appointed Manager of Lawson's Manufacturing Division, according to President D. W. Schulkind. After completing his course in mechanical engineering, Mr. Altglass was graduated from the Massachusetts Institute of Technology in 1935. He then worked as an industrial engineer, specializing in plant management and industrial plant organization. He also

Adam Altglass, recently appointed manager Mfg. Div. of E. P. Lawson Co.

made further studies in industrial engineering at the Graduate School of Engineering at Columbia University.

In 1942, Mr. Altglass entered the U. S. Air Forces as Second Lieutenant. He received several promotions and was released from active duty in October, 1945, as Lieutenant Colonel.

C. M. Kemp Mfg. Co., of Baltimore, Md., announces the retirement of E. B.

Economy's New Address

Economy Engineering Co. has announced its removal to a new address in Chicago. The address is as follows: Economy Engineering Co., 4501-23 West Lake St., Chicago 24, Ill. Phone number is EStebrook 8-9110.

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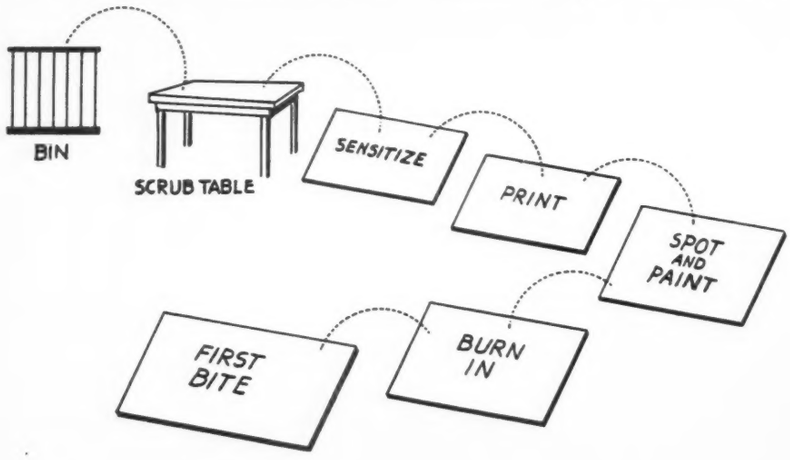

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Johnson Inks
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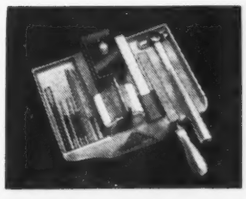
BY RENEWING WORN MATRICES



Here's one way you can cut composing room costs. Install a Curle Matrix Anvil and Tool Gauge Assembly. With this assembly you can quickly recondition mats for smooth accurate service. You will find that it's easy to use, that it soon pays for itself and keeps your equipment running continuously and efficiently. Every composing room should have these precision tools.

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Manufacturer of Composing Room Specialties

44th and Zenith Ave., So. • Minneapolis, Minn.

World's Finest **NEWSPAPER MAKE-UP TURTLE**

Nothing has been spared to make The Nolan Newspaper Turtle the strongest and most durable available. Top is precision ground to a mirror finish, measures 24½" x 28½". Seamless steel legs are stronger than iron and 75% lighter. Casters are 4" x 1½" double-ball-bearing type Weight is 175 lbs.

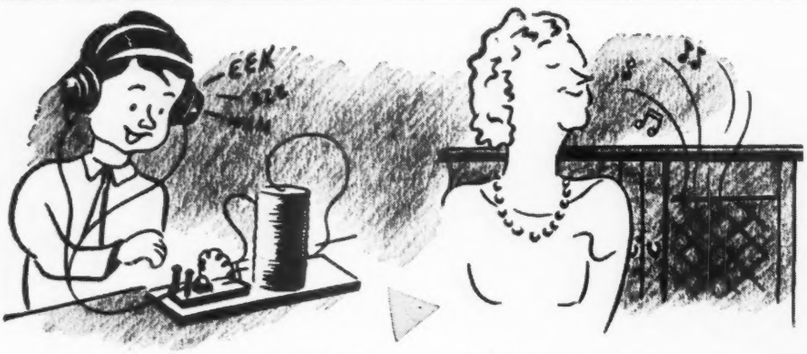
Write for Bulletin with Prices and Quantity Discounts

NOLAN CORPORATION
1331 East Dominick St.
ROME, NEW YORK

Builders of BETTER Equipment for BETTER Printing

Parsons as its 30 year San Francisco area representative. He is to be succeeded by E. A. Wilcox Co., Engineers, at 277 Seventh St., San Francisco, with a branch office in Seattle.

Two experienced stereotype executives have been added to the staff of New Products Div. of The Beveridge Paper Co., according to Sales Manager Rollo S. Lewis. The first of these is Michael J. P. Hogan who has been a member of New York Stereotypers' Union since 1918. He was stereotype superintendent of the old New York *World* and afterwards was stereo foreman of the United Feature Syndicate. He was also president of Stereotype Local No. 1 in New York for 14 years. Recently, he has been employed on the New York *Journal-American*. Hogan started with Beveridge September 1 and will represent the company in New York city and nearby points in New Jersey and Connecticut. . . . The other representative is John E. Hilliard who has been a member of the Stereotypers' Union since 1922. Hilliard has worked in New Haven, and Bridgeport, Conn.; New York, Syracuse and Rochester, N. Y. He recently resigned his position as stereotype foreman of the New York *Post-Home News* to join Beveridge. Hilliard will represent Beveridge in outstate New York, Rhode Island, Connecticut, Delaware and Pennsylvania.



Remember the squeaky crystal set with headphone?

Milady is charmed with modern AM and FM radio

Radio has never stood still . . . neither has EDES

"I won't buy a set until radio is finally perfected". Remember back 25 years ago when people — foolish people — said this? They succumbed, because radio was too good to miss.

For nearly a century Edes has produced the most *uniform* and *dependable* photo-engraving metals in the world. They are being constantly improved through laboratory research — made better every year. It's time you investigated their utmost accuracy of gauge; their marked superiority in fine line, screen or halftone work; their speed in etching and re-etching. You can't definitely know how good Edes Photo-Engraving Metals are *today* until you try them.

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EDES Engraving Metals: Regular Zinc, Hard Matrix Zinc, Triplemetal, Copper, Brass, Gravure Sheets

THE EDES MANUFACTURING COMPANY, Plymouth, Mass., U.S.A.

New York Representative, R. P. BICKFORD, Room 2118, 420 Lexington Ave., New York ● *Distributors*, G. C. AMENTA, 5842 North Leonard Ave., Chicago 30, Illinois ● GEORGE R. KELLER, 1329 N Street N.W., Washington, D. C. ● CHEMCO PHOTOPRODUCTS CO., New York, Atlanta, Dallas, Chicago, New Orleans, Boston ● ALLAN B. CROKE CO., Boston ● W. OLIVER TRIPP CO., Boston ● C. S. ILLINGWORTH, Buffalo ● G. C. DOM SUPPLY CO., Cincinnati ● J. W. FEINSTEIN, San Francisco ● MID-WEST PHOTO ENGRAVERS SUPPLY CO., St. Louis ● THOMPSON-HAYWARD CHEMICAL CO., Kansas City ● E. H. WALKER SUPPLY CO., Washington, Richmond

After a two-years' leave of absence B. W. Radcliffe is back on his old job as advertising manager, director of typography and manager of the specimen printing department of Intertype Corporation.

L. A. Weil, publisher of the Port Huron (Mich.) *Times-Herald*, has announced the following appointments: Fred O. Rouse, Business Manager; Nelson Armstrong, Director of Advertising; Frank E. Marengo, Mechanical Superintendent; Ambrose G. Alarie, Composing Room Foreman; Charles A. Peterson, Pressroom Foreman. All of these men are veterans in their association with the *Times-Herald*, they having had from 15 to 49 years services in various departments.

Frank E. Marengo, announces Publisher L. A. Weil, has been appointed Mechanical Superintendent of the Port Huron (Mich.) *Times-Herald*.

Benjamin Sugarman, President of Consolidated Photo-Engravers Equipment Co., Chicago, took a 31 in. Consolidated Precision Color Camera to Stockholm, Sweden, for exhibition at the sixth International Graphic Progress recently. Following the exhibition, Mr. Sugarman has planned a tour of all European photo-engraving, lithographing and rotogravure plants to study the various equipment needs, methods and processes and to establish dealerships in some of the more important Graphic Arts centers. His plans are to visit Norway, England, France, Switzerland, Spain, Italy and Portugal in addition to

Benjamin Sugarman, President of Consolidated Photo-Engravers Equipment Co. is visiting a number of European countries.

SEND FOR A TUBE TODAY

That's right . . . send for a tube right now . . . make it a dozen . . . you just can't go wrong for BOOTH'S Zink Cut Cement will mount your cuts quickly and hold them fast and eliminate the danger of their being out of position. And of course, we send you the handy tube dispenser.

PRICES: In the United States:
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Find Out HOW GOOD A RUBBER ROLL *Can Be*

You'll never know just how good a rubber roll can be until you try BOOTH'S BLACK RUBBER ROLLS . . . smooth, sweet-running, highly responsive . . . with maximum cam gripping qualities, resistance to glaze, and even diameter when installed properly. All these advantages are yours.

PRICES: $1.45 per pair.
$7.75 per dozen

E. A. Booth Rubber Co.

MAHONING BANK BUILDING
YOUNGSTOWN, OHIO

We stick to our last

There is enough work to do in the Graphic Arts—enough to keep us humping to give real service to Graphic Arts customers. That is why we stick to our last, serving ONLY the Graphic Arts Industry.

By specializing along this line, we give better service and better products to more customers. As we serve more customers in this one field, we learn more about this business so that we continue to be the leader. We now serve more than half of all the daily newspapers in the United States —may we serve you, too?

IMPERIAL TYPE METAL CO.

Serving the Graphic Arts Industry Only

Philadelphia 34 New York 7 Chicago 50

Imperial

attendance at the convention in Sweden.

Before leaving, Mr. Sugarman said, "European graphic arts plants are, in many ways very far advanced. It is my understanding, however, that they use the gallery type camera to a great extent. In the European reconstruction, undoubtedly there will be a considerable need for American products of the precision type."

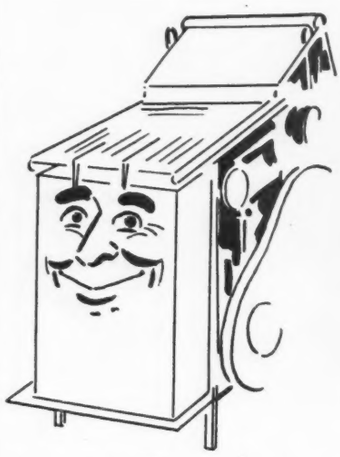
Fred J. Menninger has been promoted to the position of Assistant Plant Manager at the Newark, N. J., plant of Federated Metals, Div. of American Smelting and Refining Co., it was announced recently by Samuel Turkus, jr., Manager. The post of plant superintendent, formerly held by Menninger, will be filled by Earl R. Marble, jr., who has been serving as assistant to John A. West, Manager of Technical Operations for all Federated plants.

Charles E. Albers, general manager since 1936 of James F. Newcomb Co., Inc., commercial printers, has been elected president of the company. Mr. Albers succeeds the late James F. Newcomb. Mr. Albers joined the Newcomb company in 1924 as operating vice-president, giving up his practice as a certified public accountant. He has been active in the trade associations of the printing industry and is serving as a member of the executive committee and as treasurer of the New York Employing Printers Association.

Write... for catalog to help choose your Proving Equipment

VANDERCOOK PRE-PRESS EQUIPMENT

VANDERCOOK & SONS, INC.
900 N. Kilpatrick Ave., Chicago 51, Ill.



A good *Press* knows its grease and oil

The printing plant owner, the general superintendents, yes, and the press room superintendent might be kidded on the use of just any grease or oil, but there is one "fellow" you just can't kid and that's the press itself. A good press knows its grease and oil and will perform better if it is lubricated with ALBANY TALLOW LUBRICANTS. Used on that press of yours, it will show that it's three times as effective as ordinary lubricants. You'll get smoother operation, less "down-time" from lubricant troubles and lower yearly lubricant costs.

So you and the boss get together and give that press the lubricant it wants. If it's equipped with grease cups, give it ALBANY GREASE NO. 3... with pressure fittings, ALBANY SOFT PRESSURE GREASE... if it is oil-lubricated, give it ALBANY VISCOUS PRESS OIL... and finally give all gears, cams, chain drives—no matter what press you are using—ALBANY GEAR LUBRICANT No. 93. Let your press show you the advantage of ALBANY LUBRICANTS. Write today for Service Bulletin No. 10.

ADAM COOK'S SONS, INC.
Mfrs. of Albany Lubricating Products
LINDEN, NEW JERSEY

(Photo United Air Lines)

Sam B. Anson jr., general sales manager of Chemco Photo-products Co., Glen Cove, Long Island, is shown with his family (left to right) Martin, Christine, Mr. Anson, Sam III, Mrs. Anson and Miriam, as they were about to board a United Air Lines mainliner at Chicago for the trip to their new residence in Bayside, Long Island. Sam says, "Moving four youngsters from Chicago to New York presents quite a problem. Flying served to hold their attention and the lapse of time was so brief that neither the children nor my wife and myself were weary of the journey."

YOUR FACTORY IS A GOLD MINE

The ore you are looking for is a method of making a better product for less. A survey of your Plant by ORVILLE DUTRO AND SON may reveal that method. The cost is small—the possibilities unlimited. Patents, if any, are yours.

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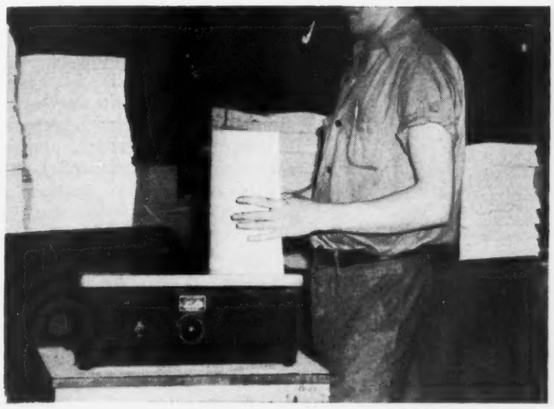
PAPER JOGGERS



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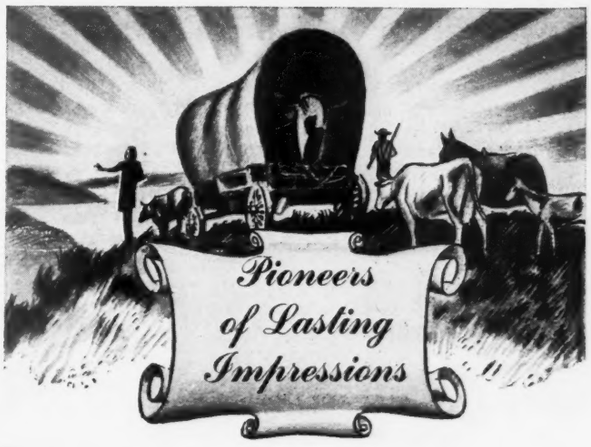

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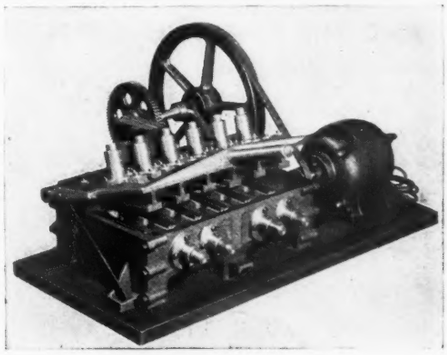
CLEAN and GRAPHITE SPACEBANDS MECHANICALLY!



SOFNAS SPACEBAND CLEANING MACHINE

SOFNAS AUTOMATIC **MOUTHPIECE WIPER**

for ALL 30-EM Linotypes

SOFNAS BROS.

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Write today for your free copy of Los Angeles Type and Rule Co.'s new specimen price list that shows over 200 different type faces—many of them exclusive designs available only at L. A. Type.

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	Cap Font	Lower Case	Complete Font
12-pt. No. 827	22A-$3.90	43a-$2.70	$6.60
14-pt. No. 827	18A- 4.50	35a- 3.30	7.80
18-pt. No. 827	12A- 4.95	24a- 3.35	8.30

Three Sizes, $20.00

All type is cast from hard, foundry metal to rigid specifications and correct alignment. Order today from the West's largest type foundry.

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• AND RULE COMPANY •

225 EAST PICO BLVD. • LOS ANGELES 15

Engineering Technical Committee

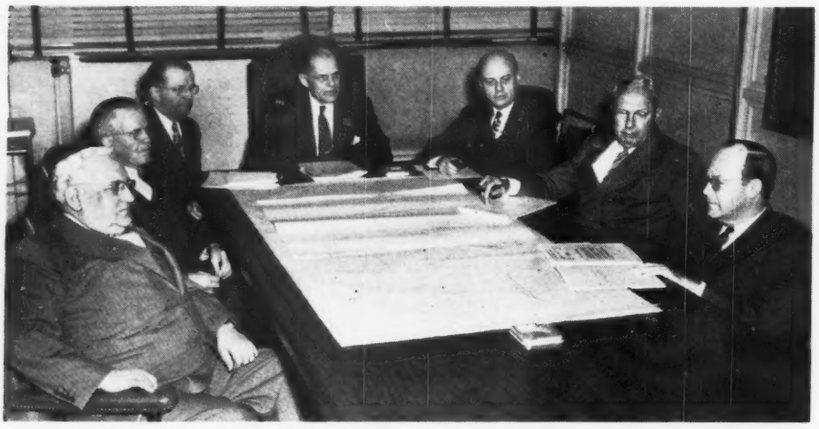
C. W. Harrold, vice president in charge of engineering and research for Harris-Seybold, has announced organization changes and the formation of an engineering technical committee for the graphic arts equipment manufacturing firm.

W. R. Spiller, formerly chief engineer of the Seybold Division in Dayton, has been named assistant vice president and transferred to the company's general offices in Cleveland. Other appointments announced were: A. B. Woodruff, engineer in charge of offset press development; C. R. Kaddeland, engineer in charge of web and gravure press development; I. F. Niles, engineer in charge of letterpress development, and H. A. Pritchard, administrative engineer.

R. I. Haywood, formerly assistant chief engineer of the Seybold Division, succeeds Spiller as chief engineer at the Dayton Plant. W. H. Wood continues as director of research, Harrold announced.

The Harris-Seybold engineering technical committee is made up of Harrold, Spiller, Woodruff, Kaddeland, Niles, and Pritchard. Wood and Haywood are associate members of the committee.

Harrold stated that the Harris-Seybold organization is continuing to place major emphasis on product development and is intensifying research activities. New engineering and research facilities will be available upon completion of a new two story building at the Harris Division in Cleveland.



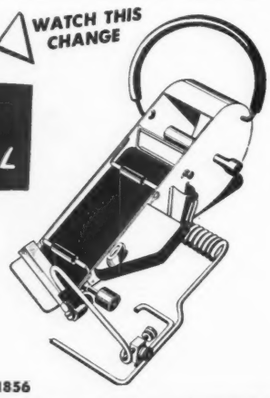
Newly formed Harris-Seybold Engineering Technical Committee—(left to right): C. R. Kaddeland, in charge of web and gravure press development; I. F. Niles, in charge of letterpress development; H. A. Pritchard, administrative engineer; C. W. Harrold, vice president in charge of engineering; W. R. Spiller, assistant vice president; A. B. Woodruff, in charge of offset press development; and W. H. Wood, director of research. Not included in the photo is R. I. Haywood, new chief engineer of the Company's Seybold Division in Dayton.

Little Giant in England

AMERICAN Type Founders Sales Corporation has announced that arrangements with Vickers-Armstrongs, Ltd., London, Eng., have been enlarged to include manufacture in England of ATF's Little Giant automatic cylinder printing presses. Earlier this year, Louis E. Pleninger, vice president in charge of foreign sales for ATF, announced that Vickers-Armstrongs had begun manufacture in England of ATF's CE-Kelly presses. The Little Giant handles sheet sizes up to 12 in. by 18 in., and the CE-Kelly 18 in. by 24 in.

ADJUSTABLE BLADE CONTROL

WATCH THIS CHANGE



ONE OF MANY NEW FEATURES OF THE *New Improved*

DICK MAILER

THE ORIGINAL AND AUTHENTIC DICK MAILER FOR ADDRESSING SINCE 1856

THE DICK MAILER • 137 W. TUPPER ST. • BUFFALO 1, N.Y.

PRINTING EQUIPMENT *new and used*

AND THE FINEST IN SUPPLIES

We offer the full **Wesel** line, including the new **Wesel Radial Arm Router**

William B. Edmondson Co.

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GOSS SUPERIMPOSED UNITS
Archtype Design

Length Cutoff 23 9/16 Thickness Plate 7/16
Width Web 66 inches

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PRINTING PRESS BLANKETS

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CLASSIFIED ADS ALL CLASSIFICATIONS

$.75 per line 1.9/16" wide. Minimum ad 5 lines, 25 characters per line. Cash with order.

CLOSING DATE—15th of Month preceeding Date of Issue.

We will forward all mail addressed to Box Numbers. When answering Box Numbered ads, address as follows: Box Number . . . PRINTING EQUIPMENT Engineer, 1276 West 3rd Street, Cleveland 13, Ohio.

THE VULCAN PROOFING COMPANY has an opening for a high type man to sell offset and newspaper blankets in Michigan, Ohio, Indiana, Kentucky and Tennessee. Full details of background and experience must be given in first letter to receive consideration. Reply to the Company, attention Personnel Manager, Frist Avenue & 58th Street, Brooklyn 20, New York.

FOR SALE

CUTLER-HAMMER 40/3 H.P. two motor full automatic newspaper press drives and control panels, 220 v. 3 ph. 60 cy. AC, complete with resistors and push button stations. Used, serviceable, now available. Two are faceplate type, equipped to parallel; three are crosshead type, will also parallel.

Hand casting stereo equipment, 21⅝ inch cutoff, several pieces, list on request.
The Eastern Color Printing Company
Waterbury 91, Conn.

FOR SALE: Two 41 x 52 Premier Cylinder Presses Serial Nos. 10195 and 10254. Hand Fed Jobber Delivery. These presses are in excellent condition; can be seen in operation. For further information call or write William G. Johnston Company, Pittsburgh 12, Pa.

SALESMAN WANTED

Leading printing machinery manufacturers offers excellent opportunity for man in select territory. Salary and commission arrangement. Printing background helpful but not essential. Write details and include photo in first letter. Reply Box 312, *Printing Equipment Engineer.*

HELP WANTED

Composing room help wanted: Operators, Hand men, make-ups, Scale, $92.00 for 37½ hours night work. Housing assistance by free classified ads. Write, or wire collect, Mr. Matlock, The Indianapolis Star, Indianapolis, Indiana.

FOR SALE

Snap-out Collators, 2 New Era Carbon Processing Machines for Linehole and Tongue work for any depth form; also Strip Interleaving Equipment; Wetter Numbering Machine for flat bed printing. Write us for prices. Reply Box 311, *Printing Equipment Engineer.*

ENGRAVER, position wanted, all around practical photoengraver, 18 years shop and manager experience. Reply Box 310, *Printing Equipment Engineer.*

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PRESS DRIVES and CONTROL
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Newspaper Presses
Printing Equipment
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FOR LINOTYPE AND INTERTYPE
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Order from
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Why the cow jumped over the moon—
they did not have a new Reid milking machine.

THE WALTER W. MEZO COMPANY
Used Rotary Newspaper and Flat Bed Web Perfecting Presses, Magazine, Color, Gravure Presses and Auxiliary Equipment.
Manufacturers' Agents for
New Equipment—Directomat, Chases, Form Tables, Saws, Routers, Casting Boxes, Furnaces, Composing Room Equipment, Monomelts. Stereotype Supplies, Ink Handling Equipment, Hydraulic Paper Cutters
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100% AUTOMATIC SLUG SAWING
Odd measure slugs sawed to any measure as ejected from linecasting machine. Fast-accurate-economical.
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RICHARDS Since 1900
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Saw-Trimmers, Flat and Curved Plate Routers, Stereotype Saws and Mortisers, Steel Rule Dies.
The most complete line built. See our page ad July issue or ask for catalog.

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Since 1936 — *For Mounting* — Since 1936
CUTS...STEREOTYPES...ELECTROTYPES
65c per tube-$5.50 per doz. $5.00 per doz. in two doz. lots, $4.50 per doz. in gross lots.
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45 Malone Avenue, BELLEVILLE 9, N. J.

LETTERPRESS • ROTOGRAVURE • OFFSET
ANALINE • WEB-DRYING-APPARATUS
B. OFFEN & CO.
168 N. Michigan Ave. Chicago 1, Illinois

Craftsmen's Convention

(Continued from Page 56)

ing surface from which the editions are produced for short or long runs.

"Third Target: *All Rotary Image Surfaces, including Phototextype:* The mechanics of predetermined layouts, precision placement of images according to layouts, upon cylindrical surfaces, and according to the method of pigment transfer to be employed.

"Fourth Target: Supply ink pigments and dyes for use in and on the new cylindrical image surfaces.

"Fifth Target: (A). Supply universal means of eliminating the need for pressure and makeready on relief image cylinders, eliminate all separate image original plates, electrotype, stereotype or hand transfers, and eliminate the causes for uneven image surfaces.

(B). Eliminate the need for water roller systems on planographic printing surfaces and thus provide long life images for long run editions.

(C). Provide better tone and color value control for gravure editions, without guesswork and other variables such as carbon tissue.

"Sixth Target: By the elimination of pressure in all printing processes, use wider variety and lower cost materials.

"Seventh Target: Provide means whereby a new start can be made in printing by offering a variety of combinations of units, designed for a given size and volume of work, operating under the new systems."

Why the Counterfeiter Always Fails

The Art of Siderography is a method of reproducing steel engravings by means of a siderographic or transfer press, invented by Jacob Perkins in 1816, so John C. Rout, Foreman of Siderography, United States Bureau of Engraving and Printing, told the audience at the general technical clinic Wednesday forenoon.

"The duties of a siderographer are to reproduce original engravings such as lettering, ornamental scrolls, portraits and vignettes, to assemble them into one design, and to position multiple numbers on subjects on steel plates and original dies for the purpose of platemaking," said Mr. Rout.

He described the making of various sections of the design of a banknote in different departments of the engraving division, on different dies. When finished the dies are hardened by submersion in hot cyanide of potassium, then quenched in brine water. The dies are then sent to the siderographic section and all parts are assembled into one die and then reproduced 12 times on a single plate used in printing currency. He described the operation of the geometric lathe. Work executed on it is one of the greatest protections against counterfeiting because of the difficulty to photograph the geometric designs, due to the varying depths of the lines.

During the question period, Mr. Rout was asked if, because of scarcity of skilled men the Bureau of Engraving and Printing trained its own apprentices for making steel engravings. He replied that the U. S. Civil Service Commission advertises constantly for trained men. He declined to state what was being done to train apprentices and gave as a reason that he was restricted in what he was permitted to say.

WISE Buys

CAMERA and PLATE MAKING EQUIPMENT—

Wessel Process Camera 24x24 gallery type No. 365;
Geortz Process Lens 19 inch No. 75899;
Levy Screen, 120 line halftone;
Wessel Bassett Photo Composing Table 48x68;
Vacuum Frame Weigard Ideal No. C1134 motor and pump, complete;
Gelb Spectro Double Arc Lamp No. B87;
PR Mac Beth Arc Lamps, type 8D6 Nos. 12505, 06, 07, 08, complete with resistors;
Horizontal Whirler, Plate, AFT, 34x45;
Lead Liner ½ inch thick sinks, 34x44x10;
Pottery Sink 28x41x7;
Flat Top Drafting Table 31x42;
Dark Room Safe Lamp, collapsible arm, Wratten No. 15486;
Enamel Trays, developing;
16 oz. Graduates;
Kodak Timers;
16 inch Hand Rollers;
Galvanized Tray, 47x58x3.
Complete outfit.

William J. Wise
Printing Machinery & Supplies
32 Blvd. of Allies
PITTSBURGH 22, PA.

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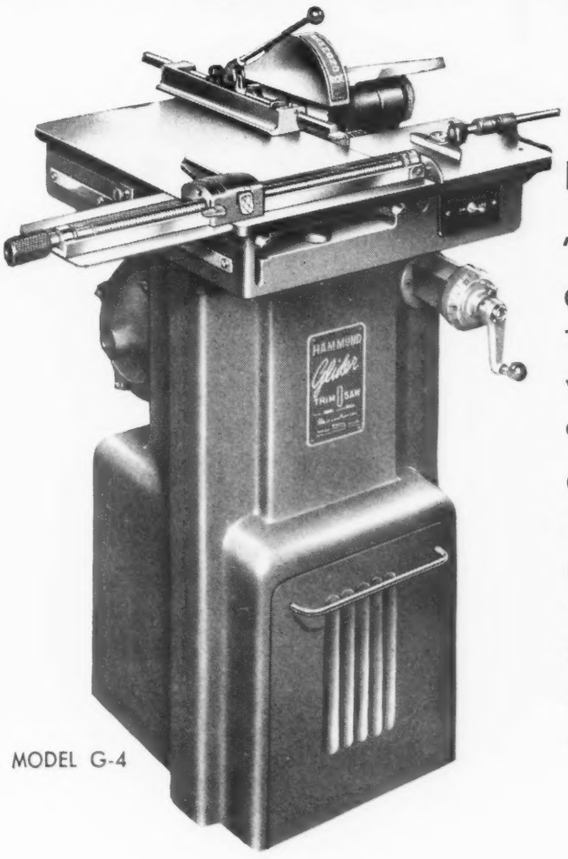

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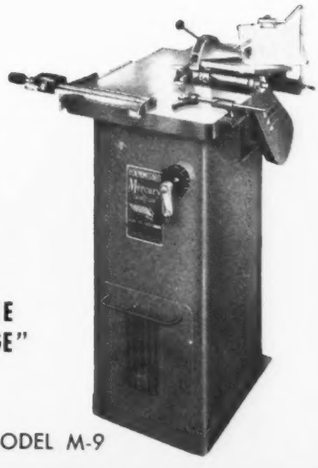

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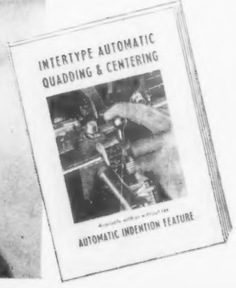

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